DITORIAL INDEX—PAGE 2

AUGUST 1949

Transportation
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CCJ COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

REO Gold Comet Power means more highway speed

To over-the-highway haulers, new Reo Gold Comet Power means full loads delivered faster than ever before. More power . . . greater fuel economy . . . easier maintenance . . . *lifetime* new-engine performance mean new savings for trucking operators. Built at a cost of five million dollars in engineering and precision production machines, new Reo Gold Comet Power was deliberately designed to fill today's and *tomorrow's* truck requirements.

YOU NAME THE TEST! Your Reo dealer will gladly accept your challenge and demonstrate the quality, power, economy of this great advancement in trucking efficiency. Reo Motors, Inc., Lansing 20, Michigan.

REO

INVESTIGATE REO BEFORE YOU INVEST IN ANY TRUCK

Here's a message every OVERLAND HAULER can read . . . profitably!

NATURALLY, you want to be successful. You want to make money. And what better way is there to *make* money than to save money on your truck transportation?

You can save *plenty* of money with trucks that fit your job . . . Dodge "*Job-Rated*" trucks.

It stands to reason: if a truck's too big for your job, you'll waste money; if it's too small, you'll pay plenty for costly maintenance.

From 248 basic chassis models, your Dodge dealer can specify a truck that will be "*Job-Rated*" exactly for your hauling job.

Such a truck will have the right one of 7 "*Job-Rated*" truck engines . . . "*Job-Rated*" for top efficiency and maximum economy. It will have the right chassis units throughout . . . "*Job-Rated*" to haul *your* loads, over *your* roads. Your truck will last longer . . . save money every mile it's driven.

So have a talk with your Dodge dealer. For remember . . . *only* Dodge builds "*Job-Rated*" trucks!

For the good of your business—

Switch to DODGE "Job-Rated" TRUCKS

Use

FORM-A-GASKET

For

LEAK-PROOF ASSEMBLIES

PERMATEX COMPANY INC., BROOKLYN 29, N. Y.

COMMERCIAL CAR

Vol. LXXVII Philadelphia, August, 1949 No. 6

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CCJ Reader Digest

Front Billing for Departments

Your favorite departments now introduce the book. Note the Conference Corner, page 6, providing engineers' recommendations for cylinder sleeve material. Factory Service News, page 15, presents up-to-the-minute service and adjustment data for popular makes of trucks. The CCJ Quiz and the Brain Teasers will be found on page 22. Laugh with the Laughs, page 42. Read The Bulletin Board, page 45.

Test Technique for Injectors

Atlantic's Transportation Engineer Gohn tells just how they calibrated, installed and serviced 188 Vitameters for a 3,000,000-mile test of alcohol-water injection. There's more to it than meets the eye. See page 80.

Rejuvenated Tractors Live Million Miles

St. Louis fleet has developed a system of rebuilding tractors from stem to stern—with a resultant 50 per cent saving over purchase of new equipment. Nine-year-old tractors are turning up mileages in millions. See page 68.

What Price Horsepower?

Horne of Mack, proves that proposed formulas for grade ability are fantastic when applied to the big jobs. He discusses pros and cons of increasing weights, speeds, horsepower, from the standpoint of costs and vehicle performance. Page 87.

Upper Cylinder Lubrication

What are fleets doing to overcome valve and top ring failures? Survey shows that top oilers, use of tune up oil and gasoline or crankcase additives help cut carbon formation and valve burning. See page 70.

Assure better engine performance and lower maintenance costs by lubricating with Texaco D-303 Motor Oil

ENGINE efficiency depends on engine *cleanliness* . . . and you can't beat *Texaco D-303 Motor Oil* for keeping heavy-duty gasoline and Diesel engines clean!

Texaco D-303 Motor Oil has high resistance to oxidation and is fully detergent and dispersive, so harmful carbon, gum or sludge won't form on vital engine parts. It protects bearings against corrosion . . . effectively guards against wear . . . increases engine efficiency and power. You use less fuel—spend less on maintenance.

Let a Texaco Lubrication Engineer help you get greater efficiency from your entire fleet. Just call the nearest of the more than 2300 Texaco Wholesale Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

REDUCE CHASSIS MAINTENANCE COSTS

Use world-famous *Texaco Marfak* to make all chassis parts last longer, work more smoothly. It stays *in* the bearings . . . resists wash-out . . . guards against rust and wear. It's longer-lasting, so fewer applications are necessary.

For wheel bearings, use *Texaco Marfak Heavy Duty*. It seals out dirt and moisture—seals itself in, assuring safer braking. Requires no seasonal change.

Lubricants and Fuels
FOR THE TRUCKING INDUSTRY

CONFERENCE CORNER

SLEEVE MATERIAL

Question:

Are Steel, or Cast Iron Sleeves Preferred? What Are the Advantages or Shortcomings of Either Material?

FACTORY ENGINEERS agree that cast iron sleeves provide better wear characteristics than steel. They are usually thicker so that distortion problems in installation are minimized. Steel sleeves, being thin, are subject to distortion.

Heat-Treated Cast Iron Preferred

by G. E. Leutwiler

Chief Service Engineer McQuay-Norris Mfg. Co.

"Our experience with the steel sleeves in certain passenger car engines is that they are too thin and so warp away from the block, so that poor heat transfer causes ring trouble and even piston scoring. We have not found it possible to run steel rings on steel sleeves, which is a further disadvantage.

"Now with a method of heat treating cast iron to increase the block hardness of about 220 Brinell up to approximately 450 Brinell by use of the hardened sleeves, we believe that the hardened cast iron sleeve is the proper type. We of course feel that wet sleeves are a great deal less trouble when used as sleeve assemblies because the installation is not so critical.

"When considering the regular dry sleeve liners which are undersize on the inside and have nothing to do with a sleeve assembly, we naturally prefer an interference fit of approximately .003, which gives almost perfect heat transfer, and one need not be concerned about how much the ID contracts or distorts, because the final operation is to bore the ID to standard and get the proper surface finish by using a 280-grit hone to remove the last .0005. This gives the most satisfactory sleeve installation but is not practical in some engines because the cylinder walls are too thin to stand the .003 interference fit."

Thermal Stability of Cast Iron is Better

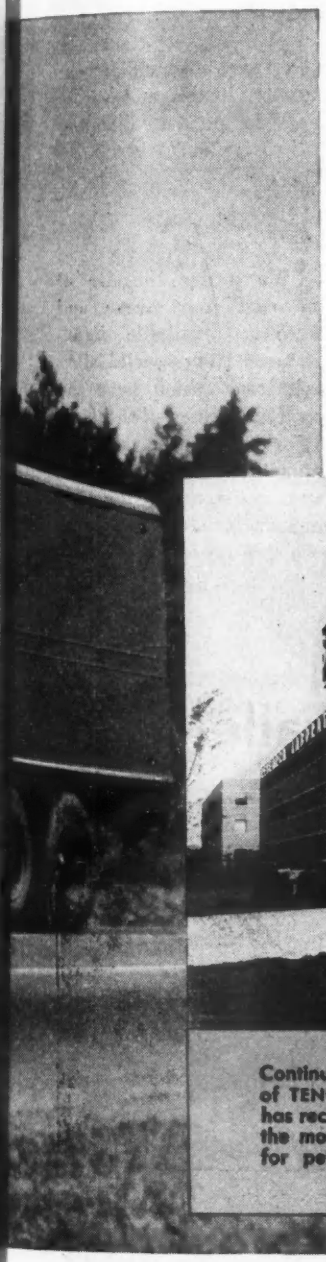
by Paul S. Lane

Director of Research Muskegon Piston Ring Co.

"We have always felt that cast iron is superior to steel sleeves because it has what we like to term 'emergency running qualities.' Steel is more generally prone to scuffing when lubricating conditions are scanty as ofttimes takes place in hot working heavy-duty engines. Also we believe that the thermal stability as regards physical dimensions of a cast iron liner is better than steel. We also had the opinion without being able to supply factual evidence that cast iron liners are less critical to damage during break-in, are less abusive on the rings, and can more readily be fitted with a ring combination to give a higher level of oil control."

(TURN TO PAGE 10, PLEASE)

Ends Sludging Diesel Equipment



A major problem of diesel engine operation is the formation of sludge, gum and varnish on valve stems, rings and other engine parts, which causes engine drag, increased operating costs and frequent tear-downs.

This problem is solved by the use of Sinclair TENOL for diesel engine lubrication. Sinclair TENOL contains special Sinclair-developed additives to prevent the formation of sludge, gum and varnish. TENOL holds these harmful elements in suspension so that they are drained out with the oil at oil change periods.

Sinclair TENOL cleans as it lubricates, thus increasing time between tear-downs and lowering cost per operating hour. Try Sinclair TENOL in your equipment.

Continual research explains the high quality of TENOL and other Sinclair Oils. Sinclair has recently completed at Harvey, Ill., one of the most modern and complete laboratories for petroleum research and development.

E. W. Isom, Sinclair Vice-President in Charge of Research says: "With the new facilities now made available to us at Harvey, Ill., we expect to find many ways to help industry cut costs through better petroleum products."

HEAVY DUTY LUBRICANTS

FOR LUBRICATION COUNSEL, OR YOU MAY WRITE TO SINCLAIR REFINING COMPANY, 630 FIFTH AVE., NEW YORK 20, N.Y.

CONFERENCE CORNER

Continued from Page 6

Cast Iron Provides Better Wear

"In regard to the type of sleeves, cast iron is preferred because cast iron always provides better wear characteristics than a steel sleeve.

"Very thin steel sleeves of the type used by one light car manufacturer some time ago are extremely objectionable for another reason; that is, the buckling and lack of conformability of the sleeve to the cylinder wall. In many cases, it has been found desirable to eliminate the sleeve entirely and fit the block with oversize pistons even though the block material is relatively soft since it was not designed to provide a cylinder surface."

Cast Iron Provides Superior Wear

by F. A. Fritz

Chief Service Engineer
Toledo Steel Products Co.

"Our cylinder sleeves are made from cast iron because of the superior wear characteristics, cost and adaptability to quantity production. The types are 180 - 220 Brinell, 450 - 500 Brinell, and 750-1000 Brinell. In addition, we list 'CL' sleeves which indicates a copper plated O. D. in the 450-500 Brinell series."

Cast Iron Sleeves Prevent Distortion

by Lee Doty

Manager Sales Engineering
Koppers Co., Inc.

"In regard to sleeve materials, we prefer the cast iron sleeves as they are usually thicker than the steel sleeves which present serious installation problems to prevent buckling and distortion."

Centrifugal Cast Sleeve Seems Best

by M. W. Marien

Chief Engineer
Ramsey Corp.

"We prefer the use of the cast iron sleeve and these are available manufactured from special alloy cast irons which have the good characteristics of ordinary grey iron and approach the hardness and wear resistance of the steel sleeve. Many sleeves are now manufactured by the centrifugal cast method, and we believe this type of sleeve has considerable merit."

PMTA Launches Driver Testing Trailers

Two trailers completely equipped with psycho-physical driver testing devices have recently been put into use as Safe Driver Clinics by the Pennsylvania Motor Truck Association. They will be made available by the Association's 51 local chapters throughout the state for testing truck drivers, school children and the general public at county fairs and other public gatherings. One of the trailers (shown above) was presented by the Fruehauf Trailer Co., the other by The Trailmobile Co. The testing equipment which includes devices for checking visual acuity, glare, depth perception, field of vision, a reactometer and a Keystone Telebinocular tester were purchased by the Association. The trailers are fitted with air conditioning units, and it is expected that interior murals will be added shortly. The interior view, taken the day the trailers were delivered to PMTA, shows, left to right, Commercial Car Journal editor, Bart Rawson, being instructed by Penn State College's Joe Intorre and Nu-Car Carrier's A. Bruce Edwards, with J. Fred Clarke, New Castle, Pa., taking the test

ROADSIDE REPORT: *Ford Model F-8 Big Job shown, operated by Carl Loosier of Memphis, Tennessee, has G.T.W. rating of 39,000 lbs. as a tractor; G.V.W. rating of 21,500 lbs.*

"My FORD F-7 and F-8 Trucks are operating at LESS EXPENSE than any other make truck!"

"I'VE BEEN operating trucks of all kinds for over 22 years in the freight business," reports Carl Loosier of Loo-Mac Freight Lines, "and can say my Ford F-7 and F-8 trucks are operating at less expense than any other make truck. We operate between 40,000 and 50,000 miles per month and our F-7 and F-8 trucks have over 150,000 miles on them. Yes, sir, they are good trucks."

Truck users like the new Ford Model F-7 and F-8 BIG JOBS. They like 'em for their performance... 145-horsepower V-8 performance. They like 'em for the comfort of the Million Dollar Cab and car-like driving ease. They like 'em for their low original cost, low operating costs and low maintenance costs offered by a nationwide organization of over 6,400 Ford Dealers.

Truck users like Ford Trucks because they're Bonus Built. Each of over 150 models, right down to the light duty Ford Pickups, is Bonus Built to last longer.

ONLY THE FORD BIG JOB HAS ALL THESE FEATURES

- ★ New 145-horsepower Ford V-8 engine for top performance.
- ★ Ford exclusive concentric dual-throat carburetor for more power, more economy.
- ★ New heavy duty 5-speed transmissions—overdrive or direct-in-fifth—for operating flexibility.
- ★ Big Ford power-operated hydraulic brakes; front 16-inch by 2¼-inch; rear 15-inch by 5-inch double cylinder on F-7, 16-inch by 5-inch double cylinder on F-8. Air brakes also available for F-8.
- ★ Ford Super Quadrax single speed axles; two-speed axle available in Model F-8.
- ★ Large diameter (10-inch) wheel bolt circle with 8 studs to allow for extra-strong hub construction.
- ★ Million Dollar Cab with Ford Level Action suspension for greater driving comfort.
- ★ Nationwide service from over 6,400 Ford Dealers.
- ★ Ford Bonus Built construction for long truck life.

Gross Vehicle Weight ratings: F-8 up to 21,500 lbs., F-7 up to 19,000 lbs. Gross Combination ratings: F-8 up to 39,000 lbs., F-7 up to 35,000 lbs.

FORD 1949 *Bonus Built* TRUCKS 1959

BUILT STRONGER TO LAST LONGER

USING LATEST REGISTRATION DATA ON 6,106,000 TRUCKS, LIFE INSURANCE EXPERTS PROVE FORD TRUCKS LAST LONGER!

factory SERVICE NEWS

Briefed for Fleets From Manufacturers' Bulletins

Continued from Page 15

ings before oil is thrown up from the axle housing bowl. Jack up *both* rear wheels and operate truck in high transmission gear at approximately 25 miles per hour for five or 10 minutes to circulate lubricant.

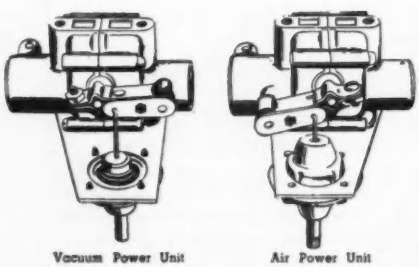
Brake Squeal
K-1, KB-1, K-1-M, KB-1-M, K-2, KB-2, K-3, KB-3

To dampen brake squeal on the above models, two ½-in. diameter pierced depressions have been stamped into the lower portion of the brake backing plate and ten equally spaced 1⅛-in. x 3/16-in. pierced depressions have been stamped around the outer edge of the sheet metal part of the brake drum.

King Pin Overhaul Kit
K-5, KB-5, K-6, KB-6, K-7, KB-7

Where excessive wear of the steering knuckle king pin eye in the front axle I-beam is experienced on the above model chassis, the eye in the front axle I-beam can be reworked to employ the 0.15 in. oversize steering knuckle king pins now available in an overhaul kit through the Fort Wayne Service Parts Department and Service Parts Warehousing Depots.

Diamond T
Speedometer Adapter



Vacuum Power Unit — Air Power Unit

A speedometer adapter and diaphragm assembly is installed on the rear of the speedometer head on all chassis originally equipped with a two-speed axle in order that a correct speedometer reading may be obtained in whichever range the axle is operated. The assembly may be changed to operate from a vacuum source to an air source, or from an air source to a vacuum source by changing the diaphragm and reversing the diaphragm bracket and adapter arm.

To do this remove the diaphragm and take off the bracket, turn it upside down and bolt it back in place. Loosen the clamp screw on the adapter arm, remove the arm and reinstall it in the reverse position or 180 deg. from the original position. The new diaphragm can then be installed.

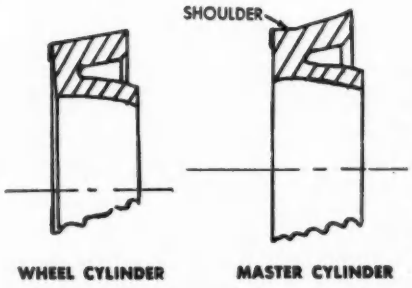
FWD
Thermostat Change

FOUR Wheel Drive trucks were originally equipped with thermostats designed to maintain temperatures at a higher level than is practical with an alcohol antifreeze. There is danger of alcohol loss if the coolant temperature exceeds 162 to 163 deg. To overcome this problem truck engines in future production will be equipped with thermostats designed to start opening at 160 deg.

Tire Size Recommendation

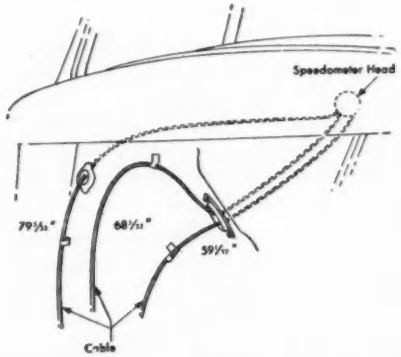
FWD makes the following recommendations with respect to tire sizes. A four-wheel drive unit must be equipped with the same size tires on all four wheels. Different sizes will create excessive differential action in operation with the center differential unlocked, and will create a terrific strain in the driving line when operating with the center differential locked. A strain in the driving line built up from this cause will eventually cause excessive scuffing of the tires, undue wear in the various differential and driving line parts and an eventual failure in some part of the driving line.

Plymouth
Cylinder Cup Identification



THE ONLY manner in which the correct identity of brake wheel and master cylinder piston cups can be positively established, is by distinguishing between the actual physical difference of the master cylinder secondary and wheel cylinder cups. The major difference is in the shape of the outer surface as shown in the illustration. The wheel cylinder cup has a flat surface, whereas the master cylinder secondary cup has a distinct right angle shoulder in addition to its customary flare.

Speedometer Cables



THREE DIFFERENT length speedometer cables have been used on the model P-15 Plymouth car. The desired length cable can be selected by a visual inspection as shown in the illustration.

Before a speedometer cable is installed in the cable housing, the cable should be tested for any kinks. A good way to check a cable for kinks is to lay it on a flat table in the form of a large letter "S" and then rotate the cable slowly by hand, checking for any tendency of a whipping action in any portion of the cable. If such a condition is apparent, a new cable should be installed. Be sure to lubricate the new cable with a fibrous type lubricant.

New Goodyear "Dry-Proof"

goes 3 times longer without a drink

NO wonder a camel's jealous when he looks at Goodyear's new YKL "Dry-Proof" battery. For this amazing battery —the most remarkable in years— *needs water only ⅓ as often as conventional batteries!*

Other outstanding features of this new battery are its amazing durability, thanks to Fiberglas insulation mat construction, and its increased, longer-lasting power, supplied by extra plates of higher capacity.

Today, the new heavy-duty YKL "Dry-Proof" is setting new records with light-truck, taxi and tractor owners and operators for dependable, long-lasting trouble-free stop-start service.

Ask your Goodyear dealer now to give you all the facts about this remarkable battery. Remember, when you buy the new YKL "Dry-Proof" you get a real battery bonus.

Goodyear also features a full line of heavy-duty six- and twelve-volt batteries for larger trucks, buses and Diesel engine jobs.

Free Loan to Fleet Owners

Fleet owners of 25 or more trucks can get free loan of Goodyear's exclusive PowR SavR. It insures safe, automatic care of idle truck batteries right in your own garage—batteries always at power peak, instantly ready at any hour. See your Goodyear dealer for details.

YKL BATTERIES —for taxis, tractors, trucks

GOODYEAR

THE GREATEST NAME IN RUBBER

YKL, PowR SavR—T.M.'s The Goodyear Tire & Rubber Company

CCJ QUIZ

By G. W. Bahl

Our government expects to spend lots of dollars for vehicles in this fiscal year which means workers in the automotive industry will have a splendid chance to work hard for some of this money. Start off right and you should have no trouble in getting seven correct answers to the following ten questions. Check your score on page 146.

1.

Pending Senate approval, the Automotive Industry will begin work on the biggest peacetime military order in history. Total value of trucks, cars and spare parts will be

( ) $ 75,000,000 ( ) $125,000,000
( ) 100,000,000 ( ) 150,000,000

2.

This order, to be placed for the fiscal year beginning July 1, will purchase

( ) 12,500 motor vehicles ( ) 22,500 motor vehicles
( ) 17,500 " " ( ) 27,500 " "

3.

The total cost of the motor vehicles under consideration will be double that spent in the past fiscal year, or

( ) $83,000,000 ( ) $103,000,000
( ) 93,000,000 ( ) 113,000,000

4.

Spare parts, to maintain these vehicles capable of further service, will total more than

( ) $27,000,000 ( ) $37,000,000
( ) 32,000,000 ( ) 42,000,000

5.

This program will call for the manufacture of 6705 trucks of 2½ ton capacity with spare parts for one year. Cost of these will be more than

( ) $22,000,000 ( ) $42,000,000
( ) 32,000,000 ( ) 52,000,000

6.

$15,800,000 will be spent on 1¼-ton trucks. This money will build

( ) 5320 vehicles ( ) 7320 vehicles
( ) 6320 " ( ) 8320 "

7.

¾-ton trucks are next in line and 2663 units will be assembled at a total cost of

( ) $11,450,900 ( ) $21,450,900
( ) 16,450,900 ( ) 26,450,900

8.

$11,191,000 will be expended on 5-ton trucks, sufficient to make

( ) 439 vehicles ( ) 539 vehicles
( ) 489 " ( ) 589 "

BRAIN TEASERS

By Boris Randolph

Hidden Parts

How many truck parts can you find hidden in the following paragraphs? Example: "They had a sharp *ump*ire at the ball game conceals the word "pump" as indicated by the underscoring." You should find 22 below wiahout too much trouble.

I don't know how he eluded the policeman who started to rush after him, but, somehow, he escaped.

As one of his country's defenders he had been drafted while still a student and had wound up on a naval vessel as a member of the admiral's crew.

She plunged ahead lightheartedly, her blond rumpled hair in the wind, a neat ankle showing from under her skirt, a spring to her step. No, indeed! You could never forget Irene.

Don't forget to pay the tax levied by the country, if any. Your last chance to pay up is tonight.

He made a thin gesture, such as sissies make when they are afraid, but a moment later he was watching his opponent like a cobra keeps watching his prey, and his fists began pounding earnestly in the other's face. In the end he gave anything but a bum performance, leaving everyone in utter amazement at the change in him.

Angleville

Angleville is a funny looking town. In fact, its outline is exactly like the figure below. And what's more, it is made up of 13 angular districts, all shaped alike and of exactly the same size. Can you show how these districts must look on the Angleville map?

Answers on Page 162

9.

Light sedans, for a total of 1228 units, will also be included in this purchase at a cost of

( ) $1,496,400 ( ) $1,596,400
( ) 1,546,400 ( ) 1,646,400

10.

Add these new vehicles to the 7,000,000 trucks registered in this country today and estimate how much money will be paid back in special taxes.

( ) $ 503,502,500 ( ) $1,503,502,500
( ) 1,003,502,500 ( ) 2,003,502,500

Detroit Dispatch

by LEONARD WESTRATE
CCJ Detroit News Editor

Will brake certification come for trucks? . . . When will we see the new Reo and IHC engines? . . . What's the latest ICC thinking on wheel flaps? . . . How are truck sales going?

What's a Good Brake?

Truck manufacturers generally don't see eye to eye with ICC on what the latter would like in the way of parking brakes for trucks. The manufacturer's position is simply that it is unreasonable to expect truck parking brakes to hold both the vehicle and the trailer or other units behind it.

Although not much has been heard recently about brake certification for trucks, it is believed that such action will come within the next couple of years. The thinking in Detroit is that state legislatures by that time will put the heat on for some type of brake certification. Data already have been compiled for single vehicles and currently tests on combinations are underway. It also is reported that there is some dispute about the proposed standard of a 30 ft stop at 20 mph while fullly loaded for single vehicles. It has not been announced what standard the industry will call practical for either single vehicles or combinations. Another point of issue is whether the certification should be valid for only the stated gvw of the truck or whether a specified percentage of overloads should be allowed. The truck makers do not favor any overload certifications.

Here's Mud in Your Eye

It now seems likely that wheel flaps or some other anti-spray device will be included when the ICC proposed revisions of safety regulations become effective. There has been agitation for some years from motoring groups that some type of rear mudguard or other protection be required on trucks. The proposed flap would limit height of thrown-back material at 45 mph to 3.5 ft for water and 4.5 ft for stone and other dense matter. Truck manufacturers do not appear to be objecting to the measure. In any event installation of the flaps in most cases probably would be a matter for body builders, rather than for truck manufacturers.

$1.450 Billion for Army Trucks

The truck manufacturing industry is watching progress of the North Atlantic Pact, especially the military aid phase of it. It is expected that the President will ask for about $1.450 billion for military implementation, a large portion of which would be for military trucks.

Reo Plans Smaller Engine

Reo will continue to build its Gold Crown L-head engine for a while yet for use in its smaller line of trucks. The new overhead-valve Gold Comet engine will be used in the larger line at present. However, two smaller engines of the same basic design as the large overhead valve job will go into production sometime within the next three months for use in smaller models. In addition to an order for 5000 military trucks using the large engine, Reo has a small order for Navy trucks amounting to about 225 units.

Light Truck Sales Still Good

Although truck production for the first six months of this year stood at about 625,000, the industry does not expect that rate to prevail during the rest of 1949. Currently sales are good in the lightest lines and not too bad in the madium weights, but heavies are a drug on the market. The general feeling is that the light classification will hold up well for another three months. On other sizes, however, sales are getting tighter all the time and one fleet sales manager believes the industry will do very well this year to sell 950,000 units, which is considerably below last year but far better than the prewar level.

F-7 Brake Change

Ford reports that a reduction of 1¼ in. brake diameter on its F-7 truck has resulted in greatly reducing heat generation. The improvement is due to increased flow of air by using the smaller diameter, but braking effectiveness is not reduced since width of the brake has been increased 1½ in. Operating temperatures have been reduced from about 700 to 800 deg to around 400 by the change.

Another Automatic Shift

Cadillac Div. of General Motors has under development a new type of automatic transmission. Details are not yet available, but it is reported that the unit combines the best features of a torque converter and the Hydra-Matic transmission. It is believed that the new device will probably provide a much greater number of gear ratios than is now available with Hydra-Matic alone. It still is not known when the new transmission will be made available to the public, although at the moment it seems doubtful that it would be ready for introduction on 1950 models.

Trucks Pay Third of Taxes

Here is a fact for the railroads to ponder. In 1948 for the first time in history, special truck taxes soared past the billion dollar mark, nearly equalling the total of all special motor vehicle taxes for the year 1933. According to Automobile Facts & Figures, statistical year book published by AMA, special taxes per motor truck last year averaged $150.66 against $142.37 in 1947. Truck taxes last year accounted for nearly one-third the all-time record high tax bill of nearly $3½ billion paid by American motorists in 1948, the year book states, although trucks comprised les sthan 18 per cent of total motor vehicle registrations. The $3½ billion figure represents an increase of more than 12 per cent over the previous year. In addition, motorists paid $239 million in general state sales taxes on automotive products. Another interesting fact is that 28 per cent of tax revenues of all the states last year was derived from special taxes on motor vehicles. Local, state, and federal special taxes including registration fees, gasoline taxes, city and county taxes, bridge, tunnel and ferry tolls, and excise taxes hit new highs in 1948. Facts & Figures states that federal excise taxes, which are not used for highway purposes, reached a total of $1,157 billion last year, representing nearly a third of the total. This type of tax was

(TURN TO PAGE 128, PLEASE)

The Squirt that Washes Dirt

...installed in a matter of minutes

● It's a quick, simple job to install a Trico Windshield Washer.

Drivers use it countless times to keep the view ahead in sharp focus... to wash off eye-straining dust and grime.

But the man behind the wheel thanks it most when muddy road mist or tire splash keeps blotting out all vision. The touch of a button automatically clears the 'shield.

Important? More than *four million* drivers say so!

(Trico Rainbow Blade shown)

$6.25 AND UP PLUS INSTALLATION

Most phone books list Trico installation service stations

The famous "Two Little Squirts"

TRICO

Windshield Washers

FULLY AUTOMATIC... NOTHING TO PUMP

Trico Products Corporation, Buffalo 3, N. Y.

Van Norman

World's Foremost Name in Precision Service Equipment

Spotlights this month...

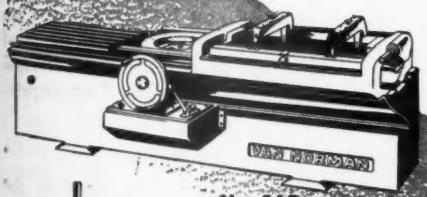
PER-FECT-O
BORING BARS

...the bars that finish a cylinder right in the chassis, in 1 Quick cut

Look at the Per-Fect-O profit-picture: 40,000,000 vehicles registered... 50% of them over 9 years old. What a market for rebore work... with Van Norman Per-Fect-O Bars that do it faster and more accurately... handle more jobs per day... *make more profit per job!* There are 7 Per-Fect-O models for all cylinders... and each model with the 4 "Cat's Paws" that not only center the bar, but support the cutter all the way down, preventing vibration and misalignment. See your jobber about the right Per-Fect-O for your work, or have him do your work for you. Van Norman Co., Springfield 7, Mass.

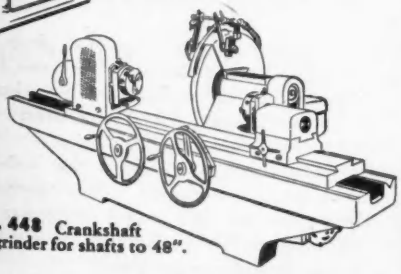
No. 777-S
with Sucker-Outer

Readily portable... bores right in the chassis. Capacity: 2.6" to 5.343" diam., depths to 14". 2 speeds and 2 feeds. Equipped for Sucker-Outer vacuum chip-remover.



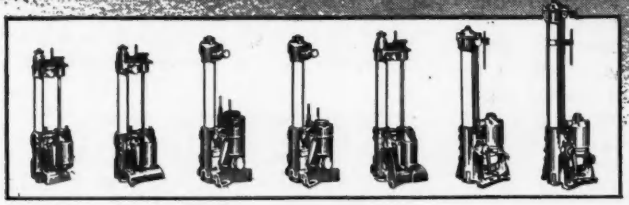
No. 565 Grinder for Heads & Block (08)

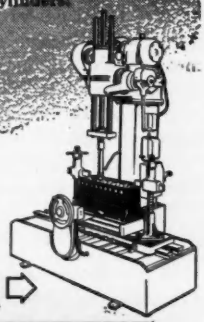
No. 303 Brake Drum Lathe takes all drums.



No. 448 Crankshaft Regrinder for shafts to 48".

WORLD'S MOST COMPLETE LINE OF BORING BARS





No. 200 W[illegible] Hone for micro-finishing cylinders.

For Best Results—Rebore ⌂ ...then Hone ⇨

The Best-Equipped Shop Gets the Business! ...that's why *"It Pays to Van Normanize"*

WORLD'S MOST COMPLETE LINE—27 MACHINES IN ALL—FOR ALL JOBS FROM BRAKES TO MOTORS

by GENE HARDY

CCJ Washington Correspondent

Can we expect a transportation rate increase? . . . Will the government seek control of production and distribution of fuel? . . . What about a transport tax cut, delivered pricing?

Whither Transport Rates?

Expressing cautious optimism over continuing price adjustments throughout industry, the President's Council of Economic Advisers in its recent report expressed a distinctly different opinion in regard to charges for transportation of goods.

The report admits that "a difficult problem of price adjustment is presented by the public-utility services, especially transportation, where competition is not directly effective." It is further pointed out that "their prices are a substantial element in the cost of production of manufactured goods, and, instead of falling, they are still rising in response to past advances in the cost of materials and labor. The Council then emphasizes that in view of the present economic adjustment, "public utility commissions as well as company executives have the special responsibilities of adjusting rates in relation to changed cost and demand conditions, with special emphasis upon the interests of the economy as a whole."

Delivered Pricing OK'd

White House aides have indicated to Congressional leaders that legislation reaffirming the legality of freight absorption and delivered prices is in line with the President's program.

With this final hurdle apparently cleared it appears certain that the confusion over the legality of selling methods will be dispelled at least until the Federal Trade Commission digs up a new way of attacking delivered price systems.

Segments of the trucking industry, notably the American Trucking Associations, have opposed legislation which would achieve the above objectives, primarily on the grounds of the alleged "'anti-truck policy' followed by cement manufacturers for the purpose of maintaining uniform delivered prices." Since the Supreme Court outlawed the basing point system of delivered pricing in the cement industry, some cement mills "have changed their practice and are now routing traffic by either truck or rail," according to ATA's General Counsel. Nor is FTC letting this situation go unnoticed. The Commission recently charged two western cement producers with "unlawfully discriminating in price against customers who take delivery by truck or other motor transport."

Steel Haulers Study Safety

The ICC has dropped the problem of safety regulation in highway steel shipping into the lap of the motor transport and steel industries. At an informal conference last month with the Motor Carrier Section of Safety, it was decided to set up an industry committee to work on the problem. This committee, composed of steel carriers, steel companies, and representatives of vehicle manufacturers and the ATA, held its first meeting in Cleveland on July 18.

Unless a self-regulatory program can be worked out that will be effective and acceptable to the ICC, representatives of the Commission feel that it will be their duty to take action and issue formal regulations.

At the first informal conference, ICC representatives cited statistics to show that the accident rate of the steel haulers was nearly three and one-half times as high as that of carriers hauling general commodities. Moreover, the accidents were said to be even more serious from the standpoint of loss of life, injuries, and property damage.

ICC readily agreed that far more steel was being hauled over the highway than at any previous time, but they believed the increased movement was not as great as the increase in accident frequency.

On the basis of a field survey, ICC believes that overloading and improper securing of loads were the factors which made steel hauling more hazardous than the general run of motor truck service.

Transport Tax Stays

Despite President Truman's suggestion to Congress for repeal of the federal tax on transportation of property, Congress isn't too keen about obliging the President in this instance.

Democratic leaders on tax matters in Congress reason this way: Mr. Truman insists on continued deficit financing. Therefore, the federal tax laws must be strengthened to produce the most revenue possible. And, even though these leaders agree that the reasons for repealing the transportation tax are perfectly sound, they fear that removal—or even modification—of any one of the wartime tax levies would pave the way for repeal of all such excises.

Anything can happen, though, during this month of August. It's always possible that repeal of transportation tax may be slipped through as a "rider" to a bill on another subject, but the present plans of the majority are to nip any such attempts in the bud, despite what Mr. Truman says.

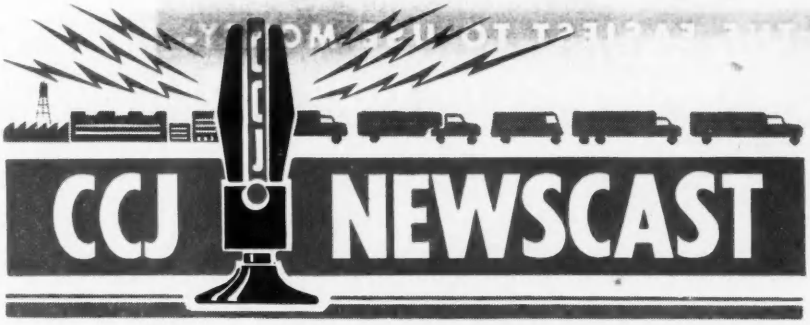
2-Year Limit on Suits

Culminating five years of effort on the part of motor carriers, water carriers, and shippers, President Truman last month signed into law a measure (S. 257) which places a two-year limitation on the period within which actions may be brought by or against motor common carriers, freight forwarders, and water carriers for the recovery of overcharges or undercharges on shipments.

Enactment of this measure places all forms of transportation on the same footing with the railroads, which a section of Interstate Commerce Commisssion Act covers with a similar limitation.

While the new law states that such actions must be brought within two years from time of the alleged overcharge or undercharge, the period may be extended under certain circumstances.

(TURN TO PAGE 150, PLEASE)



GEORGE HOOK LEAVES CCJ BART RAWSON TAKES OVER

Just after the July issue of COMMERCIAL CAR JOURNAL went to press Joseph S. Hildreth, president of Chilton Co., announced the appointment of George T. Hook as publisher of the *Iron Age*, a Chilton weekly magazine serving the vast iron and steel industry. At the same time Charles Bartlett Rawson was named editor of COMMERCIAL CAR JOURNAL.

George Hook

Bart Rawson

George Hook had been editor of COMMERCIAL CAR JOURNAL for 20 years and his step up to new and bigger responsibilities is marred only by his loss to the trucking industry. His new address is 100 East 42nd Street, New York 17, N. Y.

Bart Rawson, who for 14 years has been a member of the COMMERCIAL CAR JOURNAL editorial staff, is also well known in the industry. He is a graduate of Princeton University in the class of 1932 and served as a Major in the U. S. Army Air Corps during World War II.

EXCLUSIVE CONTRACTS OUTLAWED

The Supreme Court, by a 5-4 decision, has outlawed "exclusive dealer" contracts of the Standard Oil of California. These contracts, says the Supreme Court, violate the Clayton Act, for independent gas stations agreed to buy all gas and auto accessories exclusively from the company.

BROKERS TO KEEP SCHEDULES

New rules to govern the conduct of brokers of motor transportation of freight have been set up by the Interstate Commerce Commission. Included in the revision of rules was a change in Rule 5. Under the new provisions each broker must maintain and keep open for public inspection at each place of business a schedule showing maximum charge for each brokerage service. He will not be able to collect more for brokerage service than is contained in his schedule.

EXEMPTIONS MAY BE SAVED

The Administration has temporarily abandoned HR 3190, the House Bill containing a proposal to eliminate private carrier exemptions in the Fair Labor Standards Act. The new bill, HR 4272, which would increase the minimum wage and make no other changes, may sidetrack consideration of any other FLSA legislation this year.

ARMY SUPPORTS 18,000-LB. AXLE

An 18,000-lb axle load limit meets, for now, the highway-design requirements of the National Military Establishment for general-purpose-type vehicles. This recommendation, one of those transmitted to the Public Roads Administration at the request of Congress, was made subject to the development of additional factual information on the economics of motor vehicle size and weight for highway use and on traffic ability of soils for vehicles for off-road use.

GMC 707 ENGINE

The new GMC 707 engine described in July CCJ, page 94, develops 225 hp at 2500 rpm. Net horsepower is 198 at a governed speed of 2200 rpm. Gross maximum torque is set at 576 at 1200 rpm, and the net torque is 550 at 1000. These ratings were just received from Detroit.

GROUP INSURANCE FAVORED

A plan contemplating the organization of regional industry-owned insurance companies to serve motor carriers was discussed at the ATA Common Carrier Conference in Kansas City. Plans presented by Sam Simpson, general manager of Transport Insurance Exchange of California, called for setting up eight additional regional companies modeled after this organization.

Mr. Simpson stated that his company had saved its members approximately 25 per cent of their normal premium costs in the last 3½ years. Coverages written include fire, collision, cargo, bodily injury, property damage, general liability and workmen's compensation.

TRUCKLOADINGS STEADY

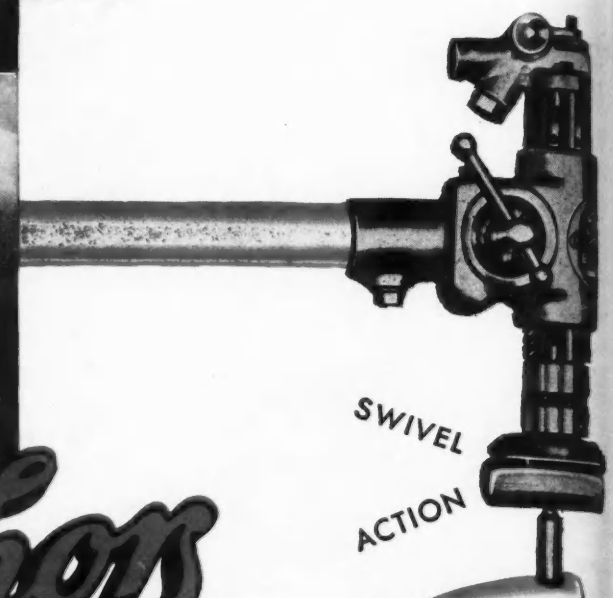
The volume of freight transported by motor carriers in May increased 1 per cent

(TURN TO PAGE 105, PLEASE)

DATES AND DOINGS

AUG. 12-13 — Idaho Motor Transport Assn. Roadeo, Fairgrounds, Boise, Idaho.
AUG. 15-17 — Society of Automotive Engineers West Coast meeting, Hotel Multnomah, Portland, Ore.
AUG. 15-19—Fleet Supervisors Training Course, University of Washington, Seattle, Wash.
AUG. 19-20—New Mexico Motor Carriers Assn. State Truck Roadeo, Albuquerque, N. M.
SEPT. 2-3—North Carolina Motor Carriers Assn. annual meeting, Mayview Manor Hotel, Blowing Rock, N. C.
SEPT. 3-5 — Minnesota Motor Transport Assn. Convention, Detroit Lakes, Minn.
SEPT. 5-7—Mississippi Transport Assn. Convention, Buena Vista Hotel, Biloxi, Miss.
SEPT. 6 — Mississippi Transport Assn., Truck Roadeo, Kessler Field, Biloxi, Miss.
SEPT. 12-13—Wisconsin Motor Carriers Assn. Convention, Lake Lawn Resort, Lake Delevan, Wis.
SEPT. 12-16—Fleet Supervisors Training Course, Purdue University, Lafayette, Ind.
SEPT. 15-17 — Virginia Highway Users Assn. Convention, Roanoke Hotel, Roanoke, Va.
SEPT. 16-17—Michigan Trucking Assn. Convention, Park Place Hotel, Traverse City, Mich.
SEPT. 16-17—Pennsylvania Motor Truck Assn. Fall Meeting, Bedford Springs Hotel, Bedford, Penna.
SEPT. 16-17—Indiana Motor Truck Assn. Convention, Claypool Hotel, Indianapolis, Ind.
SEPT. 16-18 — Central Motor Freight Assn. Motor Truck Safety Roadeo and Motor Equipment Exhibition, State Fair Grounds, Springfield, Ill.
SEPT. 19-23—Fleet Supervisors Training Course, Penn State, State College, Penna.
SEPT. 22-24—Kansas Motor Carriers Assn. Convention, Kansan Hotel, Topeka, Kansas.
SEPT. 24 — Massachusetts Motor Truck Assn. Convention, New Ocean House, Swampscott, Mass.
SEPT. 24-25—Arizona Motor Transport Assn. Truck Roadeo and Convention, Hotel Westward Ho, Phoenix, Ariz.
SEPT. 26-30—Fleet Supervisors Training Course. Ohio State University, Columbus, Ohio.
SEPT. 29-OCT. 1—Nat'l Truck Body Mfgrs. & Distributors Assn. Annual Convention, Edgewater Beach Hotel, Chicago, Ill.
OCT. 3-7—Fleet Supervisor Training Course, University of Kansas, Lawrence, Kansas.
OCT. 4—Motor Transport Assn. of Connecticut Annual Convention, Hotel Bond, Hartford, Conn.
OCT. 6-7—Tennessee Motor Transport Assn. Annual Convention, Andrew Jackson Hotel, Nashville, Tenn.
OCT. 10-14—Fleet Supervisors Training Course, University of Minnesota, Minneapolis, Minn.
OCT. 15-20 — Baking Industry Exposition, Municipal Auditorium, Atlantic City, N. J.
OCT. 17-21—Fleet Supervisors Training Course, Penn State College, State College, Pa. (Passenger Carriers)
OCT. 21-26 — American Trucking Associations, Inc., Annual Convention, Hotel Statler, Boston, Mass.
OCT. 24-28—37th Annual Safety Congress and Exposition, Commercial Vehicle Sessions, Palmer House, Chicago.
OCT. 31-NOV. 4—Fleet Supervisors Training Course, Penn State College, State College, Pa. (Maintenance Supervisors)
NOV. 2-4—American Society of Body Engineers, Inc., annual technical convention Rackham Memorial Building, 100 Farnsworth Ave., Detroit, Mich.
NOV. 3-5—Idaho Motor Transport Assn. annual convention, Boise, Idaho.
NOV. 10-12—Montana Motor Transport Assn. annual convention, Northern Hotel, Billings, Mont.
NOV. 14-18—Georgia School of Technology, Atlanta, Ga.
NOV. 17-18—Arkansas Bus & Truck Assn. convention, Marion Hotel, Little Rock, Ark.
NOV. 28-30—Florida Trucking Assn. convention, Jacksonville, Fla.

THE EASIEST TO USE MONEY-MAKING TOOL IN YOUR SHOP!



Thor

BODY and FENDER HAMMER

Even inexperienced operators do perfect work the first time with the new Thor Body and Fender Hammer—Ball Swivel Action on both upper and lower dollies! Push Button "On-Off" Air Control leaves both hands free! Speed and power easily regulated from dead stop to full force! Sensitive ratchet control, positive ratchet lock, rigid yoke locking device—features like these make the Thor Hammer the easiest to use money-making tool in your shop!

3 MODERN KITS

Send for Thor Body and Fender Hammer Circular No. 1085 with complete listings and illustrations of equipment for reconditioning all turret tops, hoods, bodies, doors and fenders.

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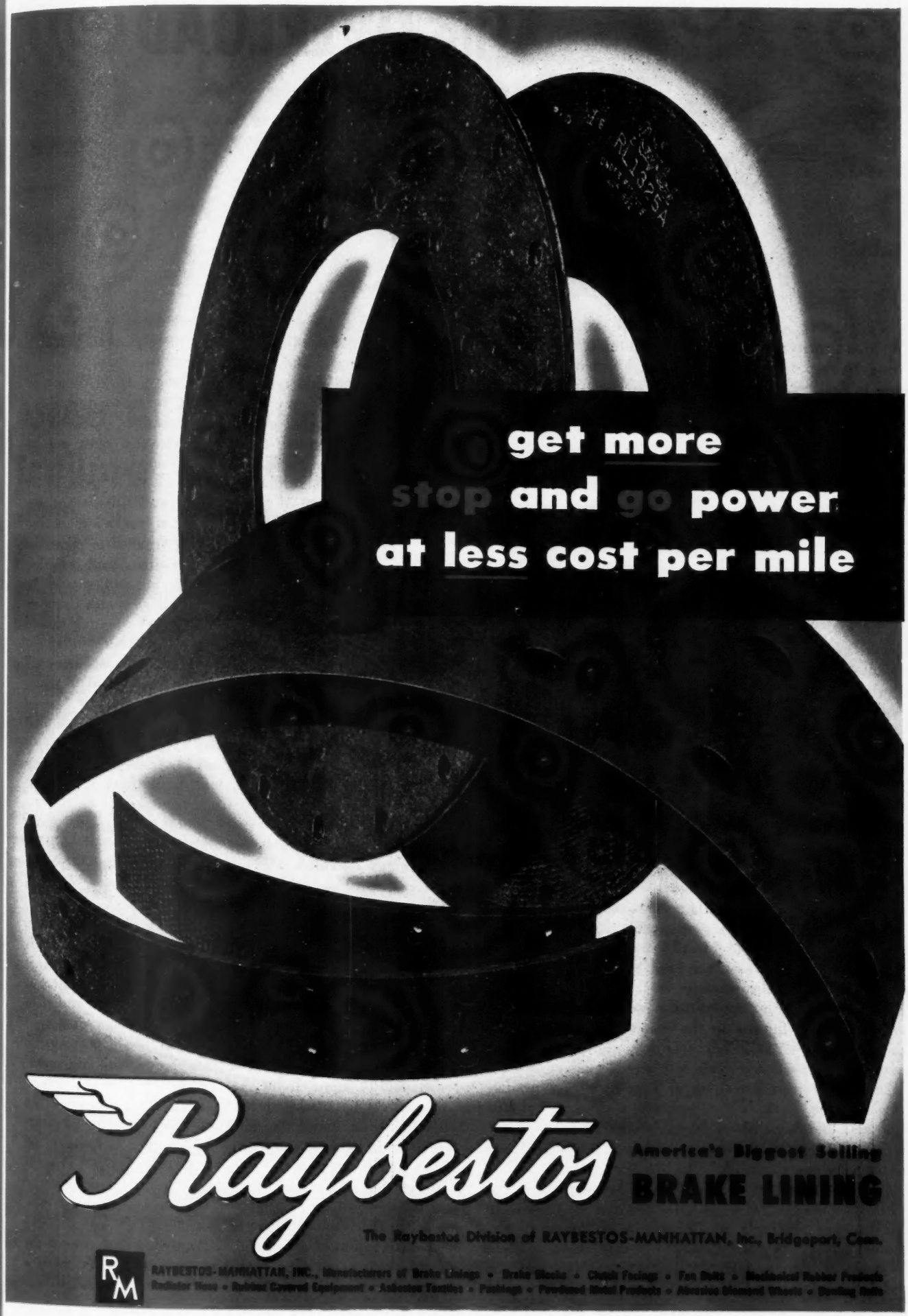
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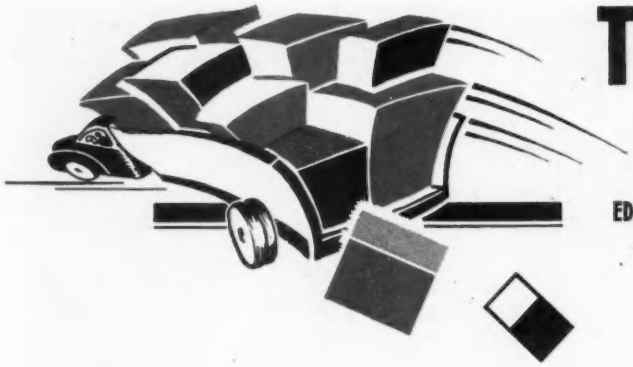

The OVERLOAD

EDITORIAL COMMENT by BART RAWSON – EDITOR

Governors' Conference Throws a Challenge to Highway Users

AS might well be expected, spot news reports originating from the recent Governors' Conference in Colorado Springs played up certain sensational remarks and led many to believe that the group as a whole was bitterly against the truck industry.

It was predicted before the session on highway transportation got under way and implied in the prepared agenda that some sort of strong anti-truck resolution would be forthcoming. But by a merciful series of shifts (many made at the last minute) from illogic to logic, all but three of the distinguished gentlemen saved themselves from a perch way out on a limb. The railroad timetables were completely upset and an extremely logical resolution for further study was adopted.

Governor Peterson of Nebraska (where the Union Pacific is all-powerful), substituting as chairman of the session for Governor Bowles of Vermont, fired the opening anti-truck guns with these remarks "For whom and for what are we building the highways? Are we building them for passenger cars and light trucks or for heavy traffic made up of 'box cars on rubber tires?' . . . If we build for heavy traffic, then our job exceeds our financial responsibility." Then, not satisfied with his own ammunition, he quoted his friend, Governor Duff of Pennsylvania (home state of the "Pennsy"). It seems that earlier in the day Governor Duff had commented on the much-publicized sit-down strike on the state's toll-charging turnpike. Governor Duff had threatened to remove them with bulldozers and was quoted by Governor Peterson as being disappointed that they had moved on for he would have enjoyed carrying out his threat. (Remember a guy named Harold Ickes?)

On his own count Governor Duff had a long prepared statement enumerating at some length a series of cases involving overloading, and finally pulled out of his hat some interesting figures on the cost of highway maintenance—$4,900 per mile per year for highways used by heavy trucks, $350 for roads not used by heavy trucks.

Finally Governor Browning of Tennessee (a state dissected by the L. & N.) completely spoiled a not-too-disputable statement about how his state was unloading overweight trucks on the spot by adding: "And if they are too long, we saw them off."

It did not take long for California's Governor Warren to call these gentlemen on at least two counts. To Governor Peterson his reply was simply a statement to the effect that his state was building its roads strong enough and wide enough to take the loads since they are absolutely necessary and that taxes had been adjusted so that the trucks are paying their share. To Governor Browning's antics with the saw, he merely asked: "Which end, Governor?" and stopped the show.

Then as the tide continued to swing from illogic to logic, Governor Dewey (who got off to a bad start about equipping buses with governors—presumed to be of the speed type) suggested that the conference must not go out on a limb with premature conclusions.

Perhaps most significant of all were these remarks by Governor Thurman of South Carolina: "Mine is not one of those states that holds the theory that trucks are nothing but a menace on the highways . . . We need to prescribe a maximum load limit, but we have no evidence that 18,000 is the highest weight that can and should be carried on an axle. We allow 20,000 lb in South Carolina and believe it is all right . . . Study and research should be made to ascertain the facts and the truck needs; deliberate action can then be taken through our legislatures."

Governors McKay of Oregon, Carlson of Kansas, Turner of Oklahoma, Carvel of Delaware and Lee of Utah, were among those who paved the way for the final resolution which read as follows:

"There is a demonstrated need for reasonable and uniform maximum size and weight limitations among the states with respect to motor truck transport.

"The Governors' Conference, therefore, urges the states to consider the establishment of reasonable and uniform maximum standards and requests the Council of State Governments to study this matter and report to the Governors prior to the next annual meeting."

So it is that we in the industry have a year of grace. A year to help these heads of state to make up their minds anew on the status of truck transportation within their boundaries. How can it be done? Is it not a matter of education—not of the type that would try to ram selfish interests down a Governor's throat, but rather of a type that goes to the people for whom the Governors serve?

Joe Doakes, as he damns a "box car" on his highways, still doesn't know about the 25,000 communities served exclusively by trucks. John Doe, as he runs afoul of an irresponsible single truck, doesn't know what well-organized individual companies are doing to eliminate the irresponsible driver. And even Shipper Smith too soon forgets the importance of highway transportation in the distribution of everything he sells, buys, wears and eats.

Until the people know these facts the industry will still have confusion. But *when* they do, they will find even the rail-indoctrinated Governors on their side. We have a year of grace . . . a challenge that must not be neglected.

. . . BECAUSE IT'S ALL-ALUMINUM!

Alcoa Aluminum makes this new Trailmobile STRONGER • LIGHTER

Leading trailer builders, like The Trailmobile Company, Cincinnati, know what the fleets want. So they're using Alcoa Aluminum construction to give them equipment bonuses like these . . . Weight saving at low cost. Extra large payload capacity. Lower operating costs. Simplified maintenance. Attractive appearance. Rugged strength for greater safety, longer life.

The new Model AA Trailmobile makes skillful use of many exclusive aluminum advantages. Side panels are alclad sheets—special aluminum alloy on the outside for maximum resistance to corrosion—heat-treated aluminum alloy on the inside for strength. Special, self-reinforcing aluminum extrusions are used for roof coves, roof bows, side posts, corner posts, lower rails, rub rail and cross bolsters. Landing gear parts, rub rail corner reinforcements, and wheels are aluminum castings. Most of the underframe is Alcoa Aluminum! Total weight saving is as much as 3,000 pounds!

Ask your trailer builder for complete facts on the operating economy of all-aluminum equipment. ALUMINUM COMPANY OF AMERICA, 2139H Gulf Bldg., Pittsburgh 19, Pennsylvania.

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Get your free copy of Alcoa's NEW TRAILER BOOKLET

This interesting 36-page booklet was prepared by Alcoa highway transportation specialists to help fleet men trailer builders size up the operating advantages of aluminum trailers. It's full of pictures and facts based on the experience of various fleets who use lightweight aluminum equipment. Call your nearby Alcoa Sales Office for a free copy. Or write direct.

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ELECTRICAL CONDUCTORS • SCREW MACHINE PRODUCTS • FABRICATED PRODUCTS • FASTENERS • FOIL • ALUMINUM PIGMENTS • MAGNESIUM PRODUCTS

LAUGH IT OFF

Motor Truck Operator: "Mr. Gotrocks, will you lend me $10,000 for two years? I want to buy another tractor-semi unit."

Mr. Gotrocks: "Sure! I loan you all you want, but it will cost you 9%."

Motor Truck Operator: "But you can't charge over 6%."

Mr. Gotrocks: "If you want to borrow the money from me, it will still cost you 9%."

Motor Truck Operator: "What would the Higher Power up above think if he saw you charging 9%?"

Mr. Gotrocks: From up There it looks like a 6. So what."

CCJ

MAMA MOSQUITO: "IF YOU CHILDREN ARE GOOD, I'LL TAKE YOU TO A NUDIST CAMP TONITE."

CCJ

A very important person rounded a curve in his chauffeur driven limousine and was forced to a sudden stop by a convoy of trucks parked in the road ahead.

In a very irate mood, he leaned out the window and inquired of the driver of the rear truck, "What is the reason for this delay. Get your trucks moving and let me through."

"Sorry, sir," replied the truck driver, "the fog is so thick up ahead that we can't proceed."

"Oh, see here now," the very important person persisted as he looked skyward, "I can see the stars."

"Yes, sir," the truckie replied patiently, "but unless these explosives we're haulin' goes bang, that ain't the way we're goin!"

CCJ

Hippy Hilda, our corn-fed comptometer operator, says that during her vacation, she was walking on the promenade of a seaside town when she saw a weighing machine with the notice: "I speak your weight."

She says she put a penny in the slot and stood on the platform. A voice answered, "One at a time, please!"

Slim N. Greesy, our road mechanic, just returned from a vacation out west. Slim says it's easy to pick out the poor folks in the Oklahoma oil country. They wash their own Cadillacs.

CCJ

Catty Cora, our office cut-up, says she is abandoning new look clothes.

"Men," says she, "can't appreciate the flower of womanhood when they can't see the stems."

CCJ

The judge had just awarded a divorce to a wife who had charged her truck mechanic husband with non-support. "And," he said to the husband, "I have decided to give your wife $50 a month toward her support."

"That's fine, judge." said the newly-divorced mechanic, "and once in a while I'll try to slip her a few bucks myself."

The Maintenance Superintendent's wife, a very socially prominent lady was giving a big reception.

"Clarissa," she said to her long-time servant, "I want you to stand at the drawing room door and call the guest names as they arrive."

Clarissa's face lighted up. "With pleasure, Ma'am," she said. "I've been wanting to do that to some of your friends for years."

CCJ

Steno-Lou: "My work is beginning to catch the boss' eye."

Steno Sue: "Oh, did you make those garters yourself?"

CCJ

Safety Sadie says there's a vast difference between a sewing machine and a sweater girl. The machine has only one bobbin.

CCJ

Southern Freight Handler: "Say, Clem, have you met thet purty new billing clerk in the rate office?"

Southern Freight Checker: "Wal, we've howdied, but we ain't shook."

CCJ

The widowed garage operator was taking a second wife. Everything was set for the ceremony, but the groom looked bothered.

"What's the matter?" whispered his shop foreman, who was serving as best man. "Have you lost the ring?"

"No," answered the garage operator feebly, "But I've lost my wild enthusiasm."

CCJ

Personnel Manager: "Your references are in good order, and you are sufficiently attractive to please the boss, who likes good-looking secretaries. How much salary do you expect?"

Prospective Employee: "Forty dollars a week."

Personnel Manager: "Forty dollars take home pay, or does that include withholding?"

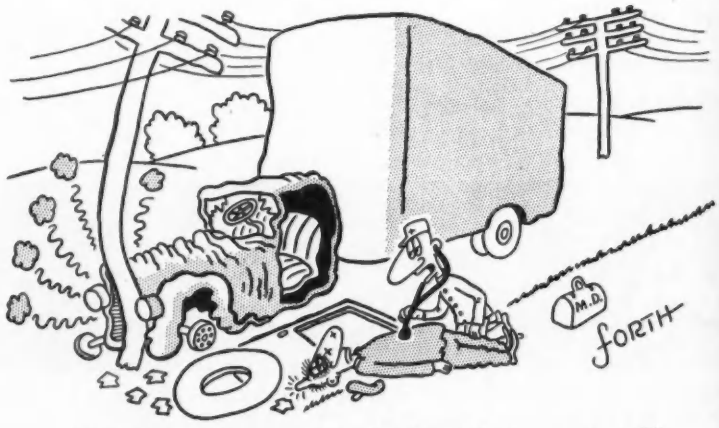
Pros. Secy.: "With holding, it'll be fifty."

CCJ

Road Driver: "Here's that pair of trousers you made for me. I want them re-seated. You know, I sit a lot."

Tailor: "I hope you've brought the bill to be receipted, too. You know I've stood a lot."

(Resume Work)



"And when did you first notice the pain in your arm?"

Mileage UP

Costs down

. . when your cargo rolls on Kellys!

Kelly Truck Tires roll up more mileage in two ways:

1. Kelly's exclusive Armorubber tread is so tough it actually outwears steel—gives you extra thousands of trouble-free miles!
2. Kellys take recaps better—giving you *more total mileage!*

That means lower operating expenses . . . *lower cost per mile per tire!*

That's why transportation men across the nation depend on Kellys to get deliveries through, on schedule.

Into every Kelly Truck Tire is built the "know-how" and skill, that have made Kellys better tires for 55 years. Try Kellys on *your* trucks next—and see the difference in final mileage figures . . . final cost figures!

Know-how makes them Better!

THE KELLY-SPRINGFIELD TIRE CO., CUMBERLAND, MD.

KELLY REGISTERED | KELLY COMMERCIAL HEAVY TREAD | KELLY DUAL TRAC | KELLY LUG TRAC | KELLY RIB TREAD | KELLY DELIVERY TRUCK TIRE

KELLY *Springfield*
THE TRUCKER'S TIRE

A TOUGH KELLY FOR EVERY JOB!

FREE PUBLICATIONS

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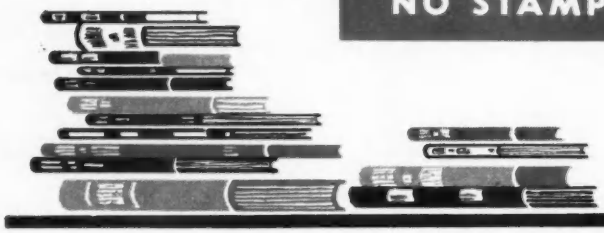


A selected list of the latest literature — catalogs, pamphlets, charts—chosen to help fleetmen improve operation and maintenance

L26. Ignition Coil

A new, fully illustrated, 24-page booklet provides the latest information on ignition coils—causes of failure not the fault of the coil, and causes due to faulty design or workmanship.

Other subjects covered include how to improve motor performance, make starts quicker and achieve maximum operating economy by using a coil of the best design for each application. What characteristics of a coil are needed for top motor performance, significance of coil polarity and reasons for engine skips at slow speed are all discussed. Many practical tips on ignition service are given.

Cut your coil failures. Write L26 on the free postcard and add this valuable booklet to your files.

L27. Color Compass

Developed to assist in specifying the correct restful, serviceable color combinations for specific areas according to particular lighting characteristics, this new color compass is now available.

The device puts color planning on a scientific basis by the preselection of preferred and alternate color schemes, based on the exposure and installed lighting in the particular room and the use for which the area is intended. It consists of two discs, one of which serves as a master color card, and the other as a direction finder and guide to the recommended colors.

Twelve basic, recommended color combinations are shown. There are a total of 28 Optonic shades in all, with five numbered shades of identical light reflectance in each five colors.

For a copy of this unique guide to successful color application write L27 on the free postcard.

L28. Inert-Gas Welding

A new reprint entitled "Practical Aspects of Inert-Gas Welding" is a 16-page article offering a comprehensive resume of inert-gas, shielded-arc welding, including a description of the process, gases used, electrodes, straight vs. deversed polarity, d-c and a-c welding equipment, control of gas flow, techniques in welding stainless steel, aluminum, copper magnesium, steel and other metals. The text is augmented by 14 photographs and three tables. Copies may be obtained without charge by writing L28 on the postcard.

L29. Accident Data

Do you need some authoritative data on highway accidents for your safety instruction? Here are some facts which will make your men sit up and take notice. It should be read by every vehicle driver.

Traffic deaths dropped one per cent in 1948, reaching a total of 32,200, as compared with 32,500 in 1947—but injuries increased 8 per cent, according to the statistics outlined in this traffic accident study. More than 10,000 deaths and more than 338,000 injuries were attributed to one universal cause—overspeeding.

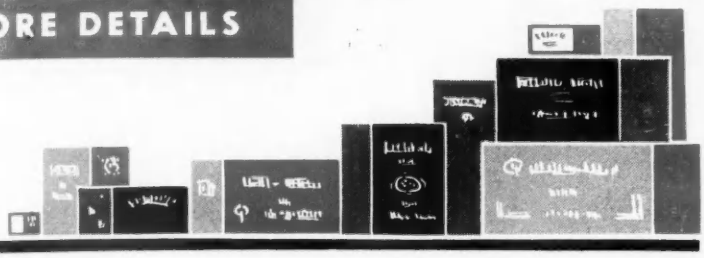
The report, based on official records from every state, compares figures for 1948 and 1947 on the basis of age, sex, road and weather conditions, type of vehicle, mechanical condition of vehicles, type of accident and many other causes.

The grim record of traffic tragedies is presented in tabular form, but the booklet is highlighted by a pictorial presentation of the probable causes of many of the accidents. Sly satire in the form of cartoons helps to bring home the lesson to the reader. The reader *may* find his own personal fault mirrored in one of the cartoons. It's effective.

Write L29 on the free postcard for a copy.

NEW PRODUCTS

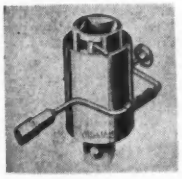
USE FREE POSTCARD FOR MORE DETAILS



Illustrating and reviewing briefly many of the newest developments in parts, accessories, shop equipment and tools. For more information mail free postcard

P81. Ratchet Adapter

The compact design of this ratchet adapter, makes possible ratchet action in extremely limited quarters. It can be used with any ½-in. square drive handles.



The adapter is made from selected alloy steel and is fully finished in bright chrome-plate. Length is 2 9/16 in., diameter, 1¼ in. Ratchet-gear has 30 teeth; shift lever reverses action instantly. J. H. Williams & Co., Buffalo, N. Y.

P82. Engine Tester

This new Universal Diagnosis Tester is designed to make complete and accurate tests of all units of gasoline engines of all types.

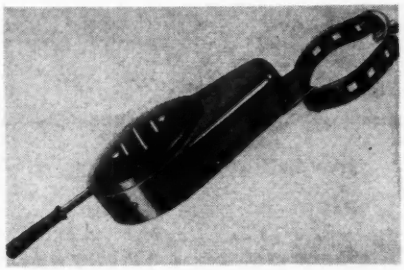
Basically, it combines all of the testing units of the Sun Master Motor Tester and Sun Master Distributor Tester together with other units in one cabinet. It will test 6, 12 or 24-volt ignition, magneto-equipped as well as distributor-equipped systems. Ampere readings up to 1500 can be made and especially long test leads are provided. The instrument can be adapted to use as a stationary bench tester, portable shop tester or a mobile tester for cross-country operation. Change-over from one use to another can be effected within a very

few minutes, making it possible to use this equipment part time in the shop and part time in the field. It is battery-operated.

Testing units incorporated in the Universal Diagnosis Tester include magneto, distributor, coil, condenser, engine vacuum, engine rpm, dwell angle, compression, combustion, voltage, amperage, ignition timing, cylinder balance, oil pressure and speedometer testers. Sun Electric Corp., Chicago, Ill.

P83. Directional Switch

This new Flashing Direction al Signal Switch with a built-in flasher provides continuous flashing red indicator light and audible click. The



switch has an indicator light which becomes inoperative when a signal light bulb burns out.

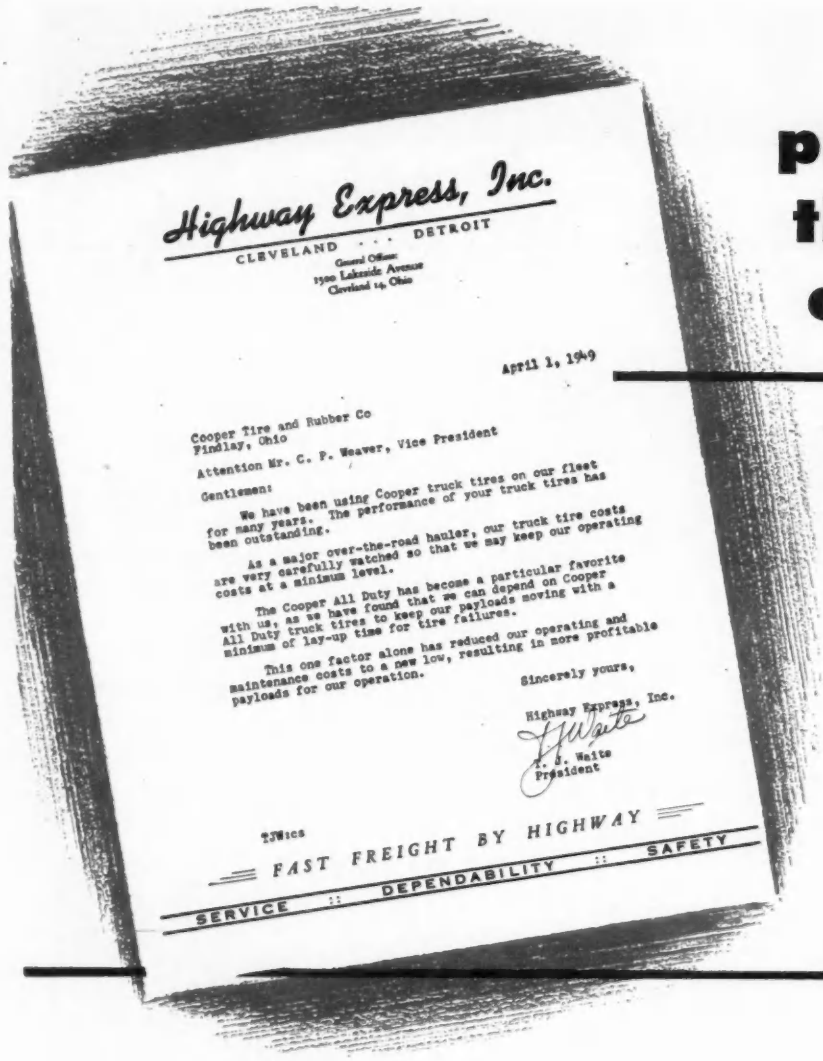
KD 714 has finger-tip control, a heavy-duty body ribbed for strength, finished in durable black enamel. The K-D Lamp Co., Cincinnati, Ohio.

P84. Lincwelder 60

For body repairs the "Lincwelder 60," a new small arc welder is now available. This welder operates off a standard 110 volt power and light circuit fused for 30 amperes and is especially designed to provide faster and better methods for working in light gage sheet metal.

The "Lincwelder 60" has a maximum output of 60 amperes at 25 volts and its range makes it suitable for welding material 1/32 in. to ⅛ in. thick. It weighs only 45 lb. and can be picked up by its handle.—The Lincoln Electric Co., Cleveland, Ohio.

(TURN TO PAGE 52, PLEASE)



Highway Express, Inc.
CLEVELAND . . . DETROIT
General Offices
1500 Lakeside Avenue
Cleveland 14, Ohio

April 1, 1949

Cooper Tire and Rubber Co
Findlay, Ohio

Attention Mr. C. P. Weaver, Vice President

Gentlemen:

We have been using Cooper truck tires on our fleet for many years. The performance of your truck tires has been outstanding.

As a major over-the-road hauler, our truck tire costs are very carefully watched so that we may keep our operating costs at a minimum level.

The Cooper All Duty has become a particular favorite with us, as we have found that we can depend on Cooper All Duty truck tires to keep our payloads moving with a minimum of lay-up time for tire failures.

This one factor alone has reduced our operating and maintenance costs to a new low, resulting in more profitable payloads for our operation.

Sincerely yours,

Highway Express, Inc.

F. J. White
President

FJWics

FAST FREIGHT BY HIGHWAY
SERVICE :: DEPENDABILITY :: SAFETY

profit by the experience of others

"The performance of your truck tires has been outstanding.

". . . we have found that we can depend on Cooper All-Duty truck tires to keep payloads moving with a minimum of lay-up time for failures.

"This one factor alone has reduced our operating and maintenance costs to a new low . . ."

HIGHWAY EXPRESS, INC.
Cleveland, Ohio

change to cooler-running Coopers with DSC construction

DSC means *Distributed Stress Construction* — a COOPER tire development that places extra strength and extra cushioning under the tread, at the shoulders and between the sidewalls and Armored Rayon Cord body itself.

The result is a stronger, more resilient tire that uniformly distributes the destructive forces of stress and strain over a wider area of springy cushioning rubber and Cooper Armored Rayon Cord to protect against localized flexing and high friction heat.

Profit from the experience of others and see your COOPER dealer for tires that run cooler, run longer — deliver more original and recap miles on the toughest kind of hauls.

Cooper

TIRE & RUBBER COMPANY

Factories at Findlay, Ohio

Sturdy as the Truck They Guard!

CELLO
Trade Mark Reg.

TRUCK GUARDS
for All Makes

Massive New Stamina
for
GRILLES, LIGHTS, FENDERS

The grille, fenders and lights of all trucks get maximum protection with massive, sturdy Cello Guards. Made of extra heavy, cold-drawn steel. Uprights are 20½ inches high. Cross rails are 1⅛ in. square, embossed, cold-drawn deep channel sections. Rugged, sturdy studs, nuts and lock washers fasten heavily rust-proofed back plates. Packed in individual cartons. Approx. wt. 25 lbs. Order by make, model, year.

CELLO
Trade Mark Reg.

A Great Name in Automotive Accessories Since 1910

SINGLE UPRIGHT GUARDS

Truck owners look to Cello for a bulwark of heavy-gauge steel between point-of-impact and costly grille work, lights and fenders. 20½ in. high, extra-heavy gauge cold-drawn steel. Rugged, sturdy studs, nuts and lock washers for fastening heavy, rust-proofed back plates. Packed 6 to carton. Approx. wt. 60 lbs. per carton.

CELLO Dual Rail TRUCK GUARD

CELLO PRODUCTS COMPANY, East Boston 28, Mass.

NEW PRODUCTS

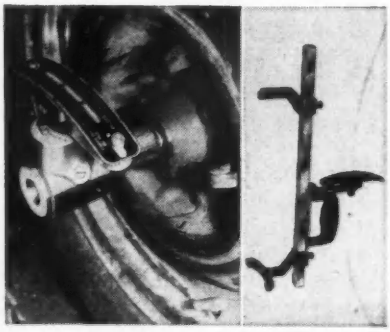
USE FREE POSTCARD FOR MORE DETAILS

Continued from Page 49

P85. Alignment Gages

Here are new wheel alignment gages designed for fast and accurate checking of caster, camber and king pin inclination angles.

At left is precision built gage designed to check the three angles from the end of the spindle or steering knuckle. Gage may be used with the wheel either off or on. Threaded adapters are available to fit all makes and models.

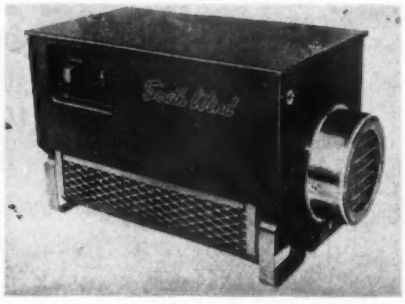


Gage on the right is for hand operation and has been designed to check the new low front fender cars as well as all other makes and models. The rim contacts are adjustable. Bear Mfg. Co., Rock Island, Ill.

P86. South Wind Heater

Model 979 South Wind commercial vehicle heater, the second of the two new models, embodies many of the principles used in aircraft heaters. It has a rated output of 18,000 Btu/hr. and starts heat delivery within 60 sec., providing continuous, forced-air circulation for cargo, crew compartment or driver. It is particularly suited to stand-up delivery type vehicles.

It is available in either six or



twelve volt models, with either manual or thermostatic heat control. Dimensions are: 19½ in. long; 11 in. wide; 12½ in. deep; weight, 37 lb.

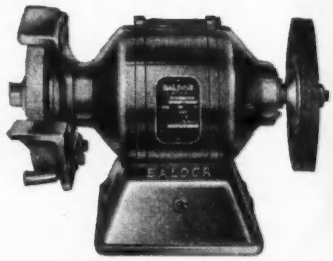
P87. Pre-Set Gap Plug

A spark plug of new basic design features a Nichrome Radial Cathode

which delivers a 360 deg. radius of fire in the form of a circle or halo, replacing the usual J-type single-wire cathode which delivers a single spark. It is said to have a hotter, stronger spark which burns all gas vapors in the combustion chamber as well as oil. A factory pre-set gap is constant in all working conditions. The Nichrome Radial Cathode's gap-setting is permanent for all makes and models of engines and does not expand under heat and compression. The American Eagle Spark Plug Co., Detroit, Mich.

P88. 10-In. Grinder

The Baldor 10-in. grinder features a large clearance between wheels and motor frame, sealed type ball bear-



ings, exhaust type guards, spark breakers and tool rests which are tiltable for angle grinding. Grinder is available in single phase ¾ hp or three phase 1 hp. The Baldor Electric Co., St. Louis, Mo.

P89. Transmission Jack

This Accurate transmission jack is made of cast aluminum with a threaded steel spindle. Although it weighs only 7½ lb, it has a lifting capacity of 500 lb and an over-all lift of 7 in. from a low limit of 13¾ in. Jack is equipped with four hard rubber-tired wheels mounted in ball bearing casters. A two-arm handwheel

operates against a ball thrust bearing for final alignment. Accurate Parts Mfg. Co., Cleveland, Ohio.

P90. Flaring Tool

This self-centering all steel flaring tool is easily adjusted to fit any size tubing from 3/16 in. to ½ in.

The large handle affords maximum

(TURN TO PAGE 154, PLEASE)

Average Life of ENGINE PARTS

SURVEY NO. 13

Part 3

Piston rings and engine valves average around 52,000 miles; con-rod bearings and piston pins are replaced a few thousand miles later. Timing gears give a third more miles than timing chains, crankshafts last twice as long as main bearings

Analysis **by A. W. GREENE,** *Managing Editor, Commercial Car Journal*

THE FACT that the life of piston rings and engine valves is almost identical is corroborated by the replacement mileage information supplied by fleet operators throughout the nation. On the basis of this experience the replacement of these parts is commonly handled together by most fleets.

However, it is well to note that the average life of piston pins and con-rod bearings is only 3000 or 4000 miles more than that of rings and valves. Thus, it may pay well to consider piston pin and con-rod bearing replacement as part of the valve and ring job. Many fleets do; especially inasmuch as 3000 or 4000

Composition of Vocational Groups as Used in the Accompanying Tables

FOR HIRE CARRIER—Motor Freight Operators in Local and Over the-Road Service.
FOOD DISTRIBUTION—Bakery, Dairy, and Other Food Products fleets.
GOVERNMENT—State, County, Municipal and Federal fleets.
CONSTRUCTION AND MINING—Building, Mine, Quarry and Gravel fleets.
INDUSTRIAL—Fleets operated by manufacturers.
PETROLEUM—Production and Distribution fleets.
PUBLIC UTILITY—Gas, Power, Water and Telephone fleets.
RETAIL DELIVERY—(Other than Food Products), Dry Cleaning, Laundry, Newspaper, Coal and Ice, Department Store, Beverage fleets.
TRUCK RENTAL—Agencies leasing motor trucks.
TRUCK AND BUS FLEETS, MIXED—Passenger carriers operating own truck fleets.

What is the Average Life of a Set of Rings?

Table 1

Some fleets report as few as 10,000 miles, others as many as 175,000, but national average is 52,014. Pistons average 76,620 and piston pins give 56,771

VOCATIONAL GROUPS	Total Number of Fleets Reporting	Number Fleets Reporting Average Replacement Mileage	PISTON PINS Mileage Range (Last 000 Omitted)	PISTON PINS Mileage Average	PISTON RINGS Mileage Range (Last 000 Omitted)	PISTON RINGS Mileage Average	PISTONS Mileage Range (Last 000 Omitted)	PISTONS Mileage Average	CON-RODS Mileage Range (Last 000 Omitted)	CON-RODS Mileage Average	CON-ROD BEARINGS Mileage Range (Last 000 Omitted)	CON-ROD BEARINGS Mileage Average
FOR-HIRE CARRIER	34	27	30 – 175	75,577	30 – 175	68,846	15 – 400	98,958	15 – 600	140,000	15 – 175	75,000
FOOD DISTRIBUTION	53	33	20 – 100	50,833	20 – 100	47,750	30 – 200	73,448	40 – 300	96,053	25 – 100	53,036
GOVERNMENT	40	28	20 – 80	41,846	20 – 80	40,885	20 – 100	55,600	20 – 100	51,316	20 – 80	44,500
CONSTRUCTION AND MINING	7	3	35 – 100	58,333	18 – 100	52,667	40 – 200	100,000	40 – 60	50,000	40 – 100	61,667
INDUSTRIAL	11	8	25 – 100	61,667	25 – 100	60,714	50 – 200	102,000	60 – 165	108,333	25 – 100	49,375
PETROLEUM	14	9	10 – 150	57,389	10 – 90	49,000	10 – 110	73,611	40 – 250	115,417	10 – 100	55,389
PUBLIC UTILITY	37	24	20 – 166	53,083	20 – 75	47,522	20 – 100	64,105	20 – 100	66,786	20 – 75	46,667
RETAIL DELIVERY	24	16	20 – 100	42,308	20 – 100	40,357	20 – 200	63,750	20 – 200	63,500	20 – 100	41,667
TRUCK RENTAL	5	3	50 – 70	56,667	50 – 60	53,333	10 – 100	55,000	50	50,000	50 – 60	55,000
TRUCK AND BUS FLEETS, MIXED	11	8	75 – 180	109,167	60 – 100	81,429	100 – 200	146,000	100 – 500	270,000	60 – 100	84,167
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	236	159	10 – 180	56,771	10 – 175	52,014	10 – 200	76,620	15 – 600	95,182	10 – 175	55,196

miles may be only a matter of two or three months service, and the cost of tearing down an engine far greater than the remaining performance value of the old parts.

An interesting observation concerning the averages shown in the accompanying tables is that certain vocations show consistently higher replacement mileages for the parts surveyed. In Table 1, for example, the For-Hire Carriers and the Truck and Bus fleets report far longer life for each part listed in the table than the average. Except for piston life, their mileages are greater than all the other fleets. This fact also is apparent in the tables below and in practically all of the previous surveys.

Food distribution fleets, and those in retail delivery service, also show up well. Considering the stop-start nature of their service, and the great deal of idling and "cold" engine running, these fleets are really right up there with the leaders.

The public utility fleets, commonly regarded as being among the best maintained fleets, show up less favorably than most of the nation's fleets. A breakdown study of these fleets shows that, as a whole, telephone companies' performance is appreciably lower than that of the other utilities—due, perhaps, to the fact that most of them farm out all or most of their maintenance—which tends to lower the general average of the public utility group. This differential is not confined to the parts studied in this issue. This has been true for all parts of the present parts replacement study. As a whole, the other utilities show better than average performance.

How Many Miles from a Set of Main Bearings?

Table 2

National average is 73,202 miles but some fleetmen say they only average 10,000 miles, others claim 200,000 miles. Camshaft bearings give about 94,440

VOCATIONAL GROUPS	Total Number of Fleets Reporting	Number Fleets Reporting Average Replacement Mileage	CAMSHAFTS Mileage Range (Last 000 Omitted)	CAMSHAFTS Mileage Average	CAMSHAFT BEARINGS Mileage Range (Last 000 Omitted)	CAMSHAFT BEARINGS Mileage Average	CRANKSHAFTS Mileage Range (Last 000 Omitted)	CRANKSHAFTS Mileage Average	MAIN BEARINGS Mileage Range (Last 000 Omitted)	MAIN BEARINGS Mileage Average
FOR-HIRE CARRIER	34	27	15 – 250	120,875	15 – 300	125,978	15 – 400	147,750	15 – 175	89,167
FOOD DISTRIBUTION	53	33	13 – 300	136,875	5 – 300	101,750	25 – 300	115,952	5 – 200	74,519
GOVERNMENT	40	28	20 – 150	74,333	20 – 100	63,000	20 – 150	76,294	10 – 100	52,522
CONSTRUCTION AND MINING	7	3	65 – 100	82,500	65 – 100	82,500	65 – 100	82,500	65 – 100	88,333
INDUSTRIAL	11	8	60 – 300	153,333	50 – 200	92,000	60 – 200	120,000	25 – 200	77,143
PETROLEUM	14	9	50 – 200	125,833	50 – 200	106,260	40 – 300	202,083	40 – 200	89,722
PUBLIC UTILITY	37	24	20 – 100	78,500	20 – 100	70,000	20 – 100	71,500	20 – 100	63,684
RETAIL DELIVERY	24	16	35 – 200	112,222	20 – 200	81,111	35 – 200	120,000	20 – 100	58,636
TRUCK RENTAL	5	3	100	100,000	60 – 100	80,000	80 – 100	90,000	50 – 60	55,000
TRUCK AND BUS FLEETS, MIXED	11	8	150 – 600	350,000	75 – 180	119,167	150 – 400	283,333	100 – 180	116,000
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	236	159	13 – 600	119,572	5 – 300	94,440	15 – 400	151,930	10 – 200	73,202

Fleets Show Timing Gears Outlast Timing Chains

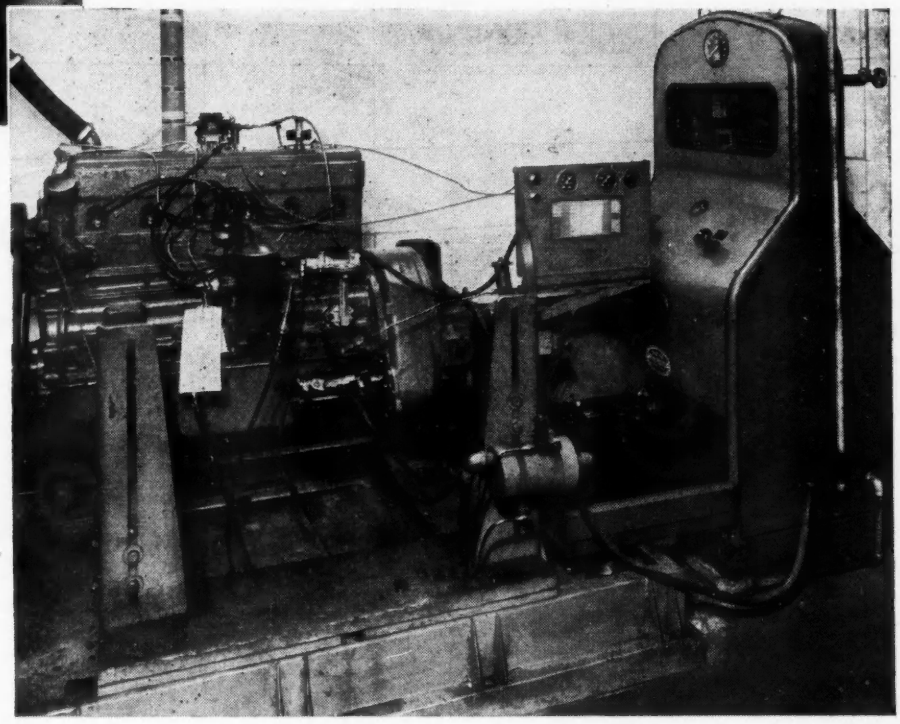
Table 3

Timing gears average 82,496 miles, while national average for timing chains is reported to be 61.747. Valve life close to that of rings with 52,057 miles

VOCATIONAL GROUPS	Total Number of Fleets Reporting	Number Fleets Reporting Average Replacement Mileage	ENGINE VALVES Mileage Range (Last 000 Omitted)	ENGINE VALVES Mileage Average	ENGINE VALVE SPRINGS Mileage Range (Last 000 Omitted)	ENGINE VALVE SPRINGS Mileage Average	TIMING GEARS Mileage Range (Last 000 Omitted)	TIMING GEARS Mileage Average	TIMING CHAINS Mileage Range (Last 000 Omitted)	TIMING CHAINS Mileage Average
FOR-HIRE CARRIER	34	27	10 – 150	51,810	10 – 150	70,682	20 – 240	99,048	20 – 175	76,867
FOOD DISTRIBUTION	53	33	15 – 200	53,981	25 – 200	62,692	30 – 300	86,458	20 – 100	60,417
GOVERNMENT	40	28	10 – 150	40,400	10 – 80	46,667	10 – 100	54,864	10 – 75	48,526
CONSTRUCTION AND MINING	7	3	30 – 100	56,667	30 – 100	53,333	45 – 100	65,000	45	45,000
INDUSTRIAL	11	8	25 – 75	45,000	35 – 75	52,000	50 – 200	112,000	35 – 200	95,000
PETROLEUM	14	9	25 – 100	48,438	35 – 200	85,833	40 – 175	97,813	40 – 100	73,500
PUBLIC UTILITY	37	24	20 – 100	50,250	15 – 100	53,026	20 – 75	54,667	15 – 90	55,270
RETAIL DELIVERY	24	16	15 – 100	43,462	15 – 125	70,417	4 – 100	48,333	35 – 100	54,296
TRUCK RENTAL	5	3	20 – 28	24,000	40 – 110	75,000	50 – 70	60,000	50 – 60	55,000
TRUCK AND BUS FLEETS, MIXED	11	8	75 – 300	181,250	75 – 300	168,750	100 – 600	287,500	100 – 160	130,000
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	236	159	10 – 300	52,057	10 – 300	64,881	4 – 600	82,496	10 – 200	61,747

Mr. Grumme supervises the break-in and engine tune up of a company tractor. A road test is final check

60% of failures and complaints have stopped, road testing is minimized. Mechanics make fewer errors, and faulty parts are detected in 6-hour run-in at 5000-mile intervals on a dynamometer



A careful check of engine on dynamometer has cut breakdowns 50%

DYNAMOMETER

Break-In Cuts Break-Downs*

By Fred J. Grumme
Vice Pres. in charge of Equipment & Maintenance
Aero Mayflower Transit Co.

AT THE END of the war when road speeds of commercial vehicles were being increased, we found ourselves attempting to govern engines with velocity type governors at a point very close to the peak of their power curve. Driver complaints were so numerous and road testing revealed such critical adjustments of these governors in this range under various conditions, a dynamometer appeared to be the only way we could possibly control these adjustments. Now, after more than three years with the dynamometer, we have formulated routine practices and procedures which we believe highly profitable.

The tune-up, break-in and testing of new vehicles or especially rebuilt units cannot be over-emphasized in our program. When such a vehicle is put on the road, we have no way of knowing when it will return to Indianapolis or how proficient a mechanic will give it its first and possibly many subsequent tune-ups. In days gone by, we exercised every precaution possible in overhauling engines and, in fact, in doing all repair work. The vehicle was generally allowed to run at a fast idle several hours and was then given an extensive road test. We presented the vehicle to the driver with our fingers crossed, advising him to take it easy the first 500 miles or so. Engine damage was frequently the result and minor complaints were embarrassingly numerous. At least 60 per cent of the failures and complaints have been stopped. Our mechanics probably make fewer errors than before because the majority of faulty parts and unsatisfactory work

(TURN TO PAGE 126, PLEASE)

* Excerpted from a paper presented at the ATA Annual Spring Meeting in St. Louis

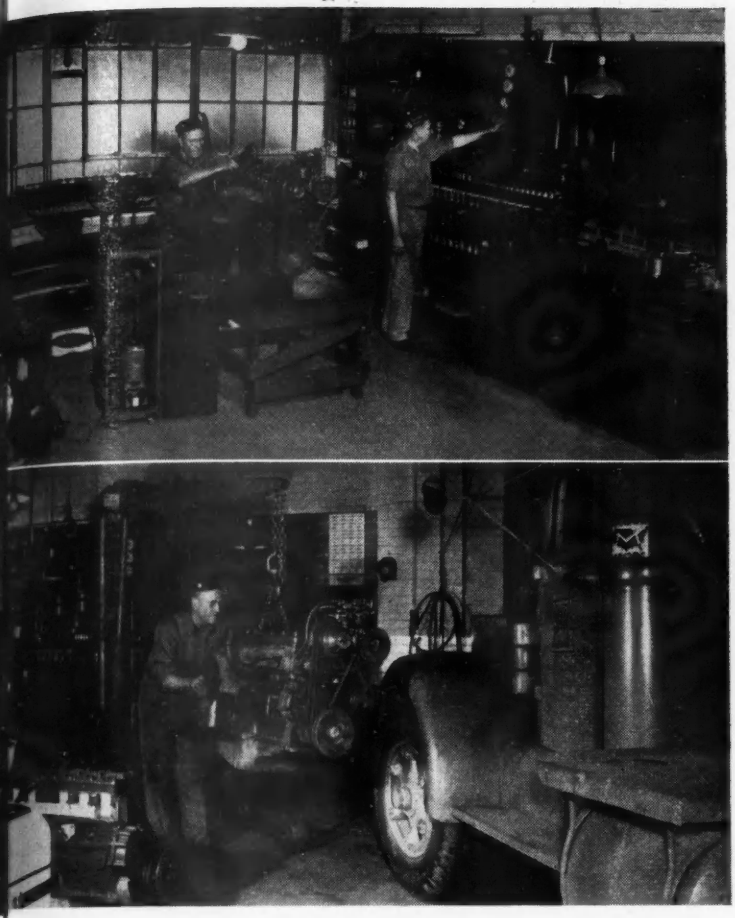
REJUVENATED TRACTORS

MILEAGE GUIDES TO MAINTENANCE . . . AT—

2000 miles—lubrication and check up
7000 miles—complete PM inspection
40,000 miles—brake and lining check
100,000 miles—install rebuilt engine
125,000 miles—rebuild entire drive line
175,000 miles—replace king pins and bushings
200,000 miles—rebuild the suspension system
250,000 miles—recondition brakes and drums

F. L. Scott

MILEAGES in the millions—that's our slogan here at Husmann and Roper. Our trucks don't wear out. They just wear down; then we build them up again. Our rejuvenation program calls for a complete rebuild from the tires to the cab when old models become obsolete. Result is a group of vehicles showing mileages of 800,000 on 1940 speedometers, and they promise that many



LEFT. This White tractor is 9 years old, has covered 837,026 miles, has been rebuilt from stem to stern. TOP. Engine rebuilding section, where power plants are overhauled every 100,000 miles. ABOVE. Rebuilt engines are stocked, ready for quick replacement

Live Million Miles Longer

By F. L. Scott
Superintendent of Maintenance
Husmann & Roper Freight Lines, Inc.

more under the maintenance set-up we have installed. Payoff comes when these 9-year old tractors compete and favorably compare with sparkling new models. Since the installation of this full-scale program, we have found that mileages are immaterial, and that age, within reason, can be ignored when you maintain and rebuild your equipment properly.

When new and better assemblies and components are built at the factory, we want them—and we get them. We put them to work on our present chassis. When installed on trucks as old as 9 years of age, modern powerplants and assemblies produce a vehicle that, in our opinion, equals new equipment in power, performance and economy. And when we reach into company pockets to pay the bill, we find a 50 per cent saving over the purchase of new tractors. That's the way *we* spell economy.

Older trucks get a face lifting that would make a slacker of a television queen. This involves the installation of new and up-to-date engines to bring the power up to modern trucking requirements. In most cases engines are larger, with greater displacement and more power per pound of weight. New cabs are purchased from the factory and installed on the old chassis. If the frame needs straightening, it gets it. If the springs, hangers, steering can be improved, new assemblies are added. Transmissions, rear ends and clutches are purchased to fit the new powerplant. Brake drums are either replaced or reground, the brake system is reconditioned if new units can improve the old, and the entire unit built to factory standards. That's what we call all-out rejuvenation.

And it pays. Cost of an entire rebuilding and restyling is approximately $2,100. Cost of a new truck of this type was $4,200. The styling is of the newest design. The performance is comparable to a new one. The savings, of course, are obvious. Trucks like the one above (rolling up 837,026 miles on its 1940 speedometer) will be a common sight as our program progresses. To date we have rebuilt six power units in this way. Others will get trimmed up and built

(TURN TO PAGE 142, PLEASE)

The daily service department, where tractors get oil, gas, water and a general inspection prior to each trip. Lubrication is done here

The electrical tune up phase of the 7000-mile PM. Engines are checked here with reliable instruments in the hands of skilled specialists

Fuel, Oil, Heat Raise Havoc with Engines

Valve failures, top ring wear, cylinder surface breakdown—what are the causes of these almost universal complaints from fleetmen? The manufacturer says it's the fault of the operator, who overspeeds, overloads and sometimes under-services. The owner blames the vehicle design, the oil, the fuel. The refiners lay it in the lap of the operators in the old pass-the-buck game—but the user still pays the bill.

Obviously a complexity of causes figures into valve and upper ring troubles. Increased turbulence in combustion chambers in modern engines, higher compression pressures, increased compression temperatures have combined to raise havoc with upper cylinder areas. Closer operating tolerances made necessary with higher speeds and increased horsepower complicate the lubrication of working parts. Inefficient combustion permits excess fuel to wash down the lubricant from cylinder walls, producing a dry surface subject to heat from friction. Particles moved from the walls are dragged along by the rings to develop more scuffing, while the surface is exposed to chemical attack by the partially oxidized fuel.

View of upper cylinder area of DeSoto engine at 91,592 miles of operation by J. F. Waters Co., New York. Note heavy carbon formation.

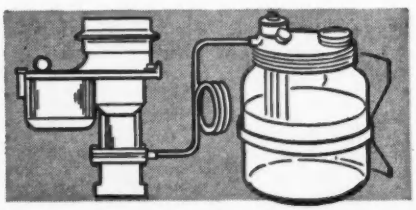
UPPER CYLINDER CARE

A survey of factory engineers and fleetmen indicates that top cylinder lubes help cut

SOME relief has been found to upper cylinder troubles through supplementary oiling of the upper chambers through the use of top oils sometimes known as tune up oils. Several products on the market today claim to remove carbon and gum formation, or to keep formation in a soft state so that it doesn't bake on working parts. This type of lubricant may be used in several ways to accomplish the job. It can be used through the carburetor air horn periodically; it can be used continuously through an upper cylinder lubricator; or it can be added to the gasoline supply or to the crankcase. Fleets have reported good results with practically all of the methods outlined on the following pages.

Upper Cylinder Lubricators

ONE method of applying top cylinder oils is through a separate device mounted on the firewall. This consists of a visible container for a



one quart supply of top oil, a regulated feed adjustment and a method of introducing the oil into the intake manifold, through a flange fitted between the carburetor and manifold.

With the flow of lubricant adjusted to the particular requirements of the engine, a dispersed spray of vapor passes into the combustion chamber with the fuel vapor, on every intake stroke of the piston. Thus the lubricator feeds only at high intake vacuum or when the engine is idling or decelerating. This, in theory, is said to introduce lubrication at the period of lowest temperature in the combustion chamber. Such a method of application makes it possible to spray the fine lubricant vapor to the intake valves, the upper cylinder walls and the top rings.

With the power stroke the lubricant entering the chamber with the gasoline helps to prevent blow-by by aid-

The same engine at 93,169 miles, after the installation of an Ampco upper cylinder lubricator. Carbon has disappeared in 1500 miles

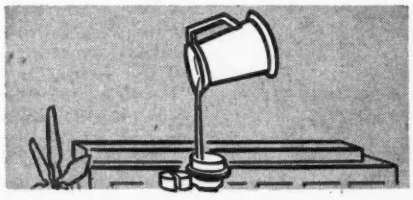
Saves Engine Wear

carbon formation, top ring wear and valve failures

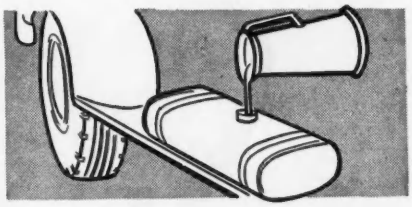
ing the ring to cylinder seal. The exhaust stroke permits lubrication of the exhaust valves and enables the exhausting gases to carry out the dissolved products of combustion. A spray of lubricant entering the chamber in this way is said to aid in cooling the heat zone, thus keeping plugs, valves and piston surfaces free from carbon and gums.

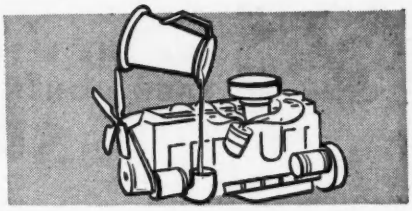
Applied Through Carburetor

SOME fleets use tune up oils in the periodic service, applying the oil through the carburetor horn with the engine idling. This method of application has proved successful in many fleets and may be used at 1000, 2000-mile or longer intervals depending upon the operating conditions. When engines idle a great percentage of the time, or after vehicles have been stored at length, use of a tune up oil via this method to free valves and rings has been recommended.



Other fleet operations make use of tune up oils mixed into the gasoline supply tanks in recommended proportions. It is claimed that this method is comparable to constant application through lubricators and that gums and carbon accumulations are cut appreciably. Advantages of this method, of course, are reduced servicing, less inspections and the lack of adjustments necessary. Some have indicated, however, that such oils affect the life of the fuel pump diaphragm.





While use of tune up oils added to the crankcase do not seem to be as prevalent, it is noted that some fleets add a quart of additive to the crankcase at each refill period and find the practice effective in reducing upper cylinder deposits.

Local Fleet Experience

A LOCAL city delivery fleet superintendent has reported favorably on an experimentation with upper cylinder lubrication. He states that use of a lubricator has been more effective than gasoline additives or use of the upper cylinder lubricant through the carburetor at 2000-mile intervals.

This practice was made necessary in this fleet due to increasing valve troubles since the war. The fleet superintendent pointed an accusing finger at the manufacturers, claiming that either engine design or poor fuel has complicated his operations, bringing valve burning and deposits to the top of the list of engine failures. Result has been a step by step trackdown of the conditions responsible for such failures.

"First," he said, "we cut speeds and loads to meet the ratings of the engine and the vehicle. We installed oversize radiators to provide better engine cooling. We replaced valves with sodium-cooled types. We performed a clean up of mufflers and tailpipes right through the fleet with the thought that back pressures were causing some of the valve troubles.

(TURN TO PAGE 170, PLEASE)

Shop hints from FLEET S

$25 FOR THE BEST HINT PUBLISHED EACH MONTH • • •

$5 FOR ALL HINTS PUBLISHED EACH MONTH

LET'S SEE WHAT YOU'VE GOT

Ever rolled off a log? That's how easy it is to roll into the money with your shop hint collection. Just put on paper what you made with iron, wood or baling wire. Give the editors a chance to study your time and money saver.

You'll be $5 richer—and you have a good chance to pick up the coveted $25 award for the Hint of the Month. Let's hear from you!

1. Two-Man Hood Lift

by Erwin W. Nagel
International Harvester Co.
Long Beach, Cal.

I made this hood lift to make the job of removing and installing hoods easier. With this device there is less danger of mechanics falling off fenders while lifting a heavy hood.

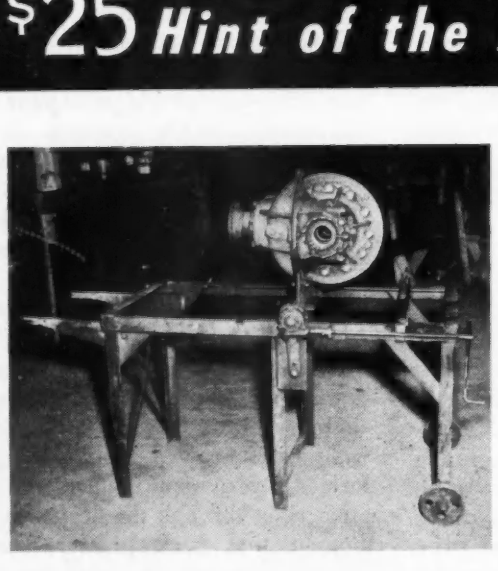
The cross piece is of 2 x 3-in. oak, 80 in. long. The center support is an old engine mount fastened to the center of the oak with wood screws. Two x 3-in. rubber bumpers are secured to the wood piece, leaving a 3-in. handle on both sides.

The hood is placed on these three supports, and the mechanics steady it while it is being lifted to the cowl. It saves a lot of scratched finishes.

$25 Hint of the Month ★

Rear End Stand

by John Horst
Superintendent of Maintenance
Shirk Motor Express,
Lancaster, Pa.

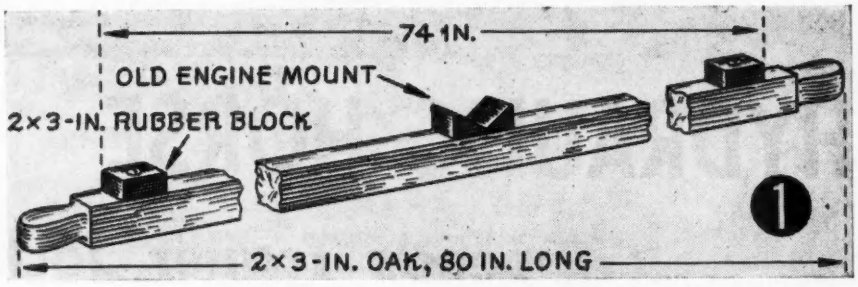


Here is a home-made rear end stand which has saved us a lot of time in handling heavy assemblies.

The stand consists of a rectangular frame made from 2 x 2-in. angle iron 60 in. long and 30 in. wide. Uprights are six pieces of angle iron welded to the frame as shown and braced with strap iron. Handles are attached at one end so the stand and 4-in. wheels are fixed to two legs so that it can be moved in wheelbarrow fashion.

The rear end assembly is bolted to a ⅜-in. plate mounted on cross shaft on a bearing surface at one side and on an old slack adjuster at the other. The slack adjuster is bolted to the frame and connected to a crank handle at one end of the frame so that by turning the handle the mounting plate and the rear end can be turned to any convenient position.

SHOPS



2. Spindle Bolt Tip

by Rollo E. Brown
Vermont Sand & Gravel Co.
Bellows Falls, Vt.

Here is how I have overcome a lot of spindle bolt trouble on our Ford trucks. When I rebush a truck, I grind the bottom of the spindle and smooth with a file. Then I drill and tap two holes and cut a plate to cover the bottom of the spindle. Short screws hold the plate to the spindle. If spindle is of the hollow type I plug the top with a wooden plug to keep grease from squeezing out. This stops entry of dirt and premature bushing wear.

3. Chevrolet Clutch Adjustment

by H. W. Richardson
Alabama Power Co. Garage
Tuscaloosa, Ala.

Chevrolet trucks, '38 through '46 with a short clutch pedal sometimes have clutches which will not release even after a rebuild job. This is usually due to a worn thrust main bearing, which allows the crankshaft to slip forward.

To correct this add ¾ in. to the clutch pedal, thus allowing for more pedal travel. Mains, of course, should be installed eventually, but this will effect a temporary cure.

4. Wheel Bearing Packer

by August M. Schmitz
Hertz Truck Lease Service
Milwaukee, Wis.

A good wheel bearing packer can be made from an old hand grease gun. It will pack several bearings on one filling and is not as messy as doing the job by hand.

Connect a short hose to the outlet fitting of an old style hand grease gun. Fit this to a small packer and make a bracket on the grease gun to hold it off the floor. This type of unit will handle almost any kind of bearing grease.

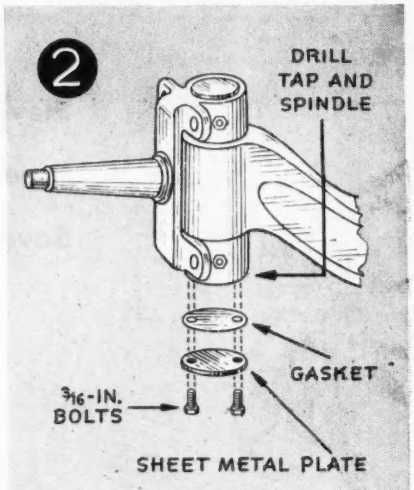
5. Axle Shaft Remover

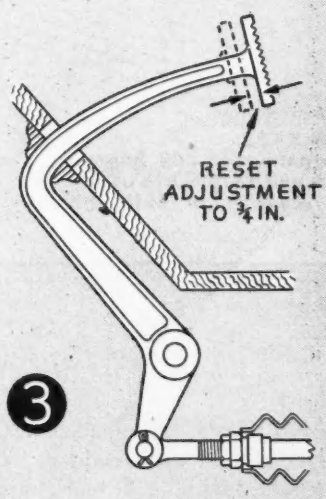
by L. A. Zeimmer
A. B. Smith Chevrolet Co.
Portland, Oregon

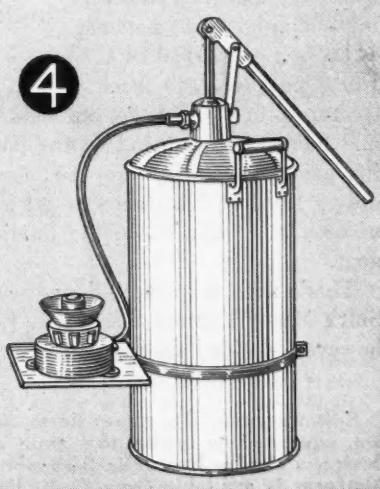
I have found that the rear axle shaft on late Chevrolet trucks can be removed easily as follows:

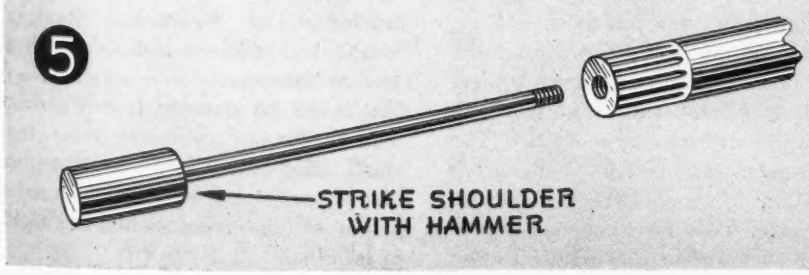
Take an old worn Chevrolet steering shaft and weld a 2-in. piece to the worn end. The other end just fits into the threaded hole in the end of the axle shaft.

Simply screw this end into the axle shaft and hit the raised shoulder opposite with a hammer, and the shaft will come out easily.





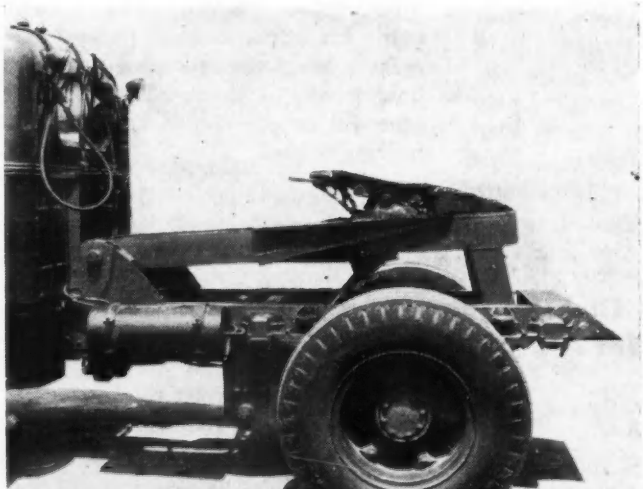




HYDRAULIC HORSE

Speeds Trailer Jockeying

Elevating fifth wheel built on yard tractor is powered with dump body hydraulic units. Saves third the time in shunting trailers



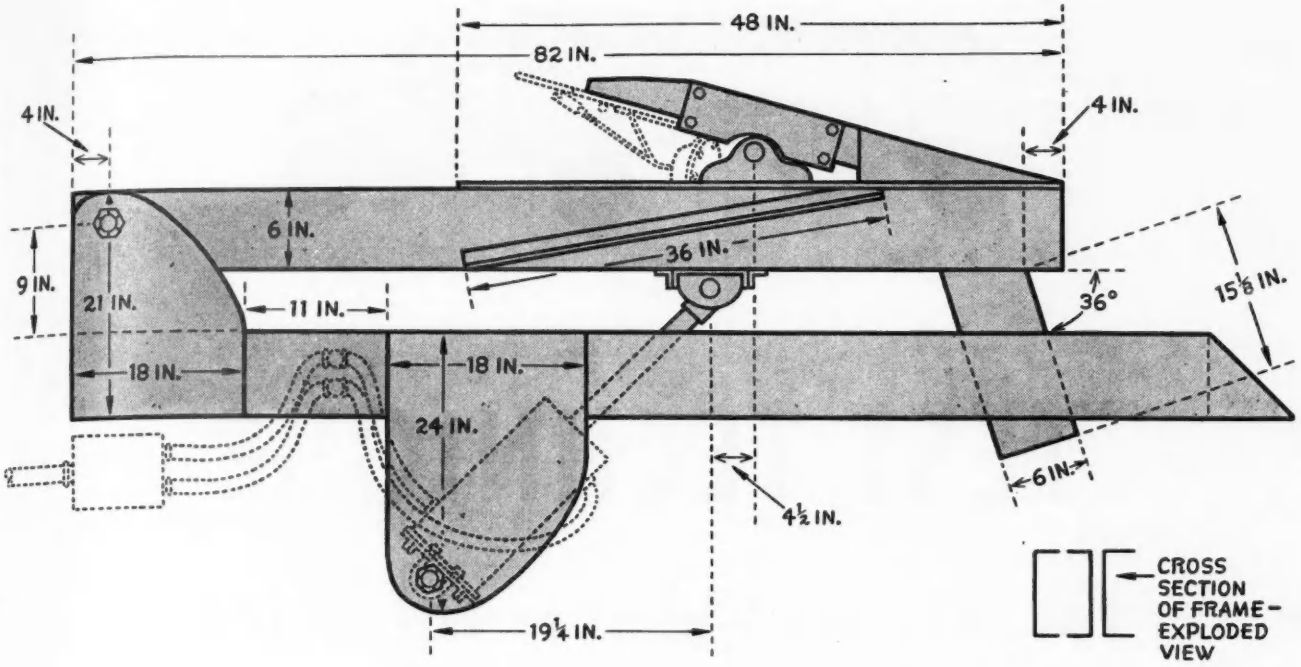
Approximately 200 hours of labor and $670 worth of parts are required to build unit

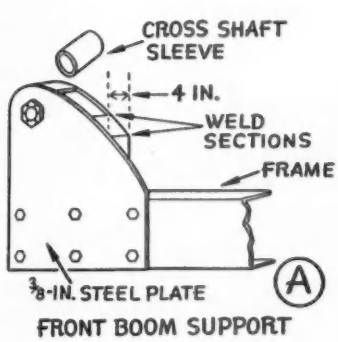
"HOSSING" fully-loaded trailers around the terminal is no easy operation. It takes a good man with plenty of muscle and a lot of patience. It takes a great deal of time when you have to back a tractor up to a trailer, get out and hook up, then wind up the landing gear. The trailer may be moved only a few feet, but then you get out, unhook and wind down the landing gear.

That's with the old-fashioned way. Shirk Motor Express, Lancaster, Pa., however, decided this procedure was too time-consuming, too costly and involved too much effort on the part of the driver. So they put three heads together (three top mechanics) and came up with a hydraulic fifth wheel lift that makes the job as easy as removing candy from a two-year old. Now one man can move seven trailers (without effort) while another with the old procedure *may* move two. The Shirk men consider this home-made hydraulic lift one of the best helpers they have. They have generously provided all construction details so the fleetman can build one for his own use. Here's what you too can have with a little time and some parts.

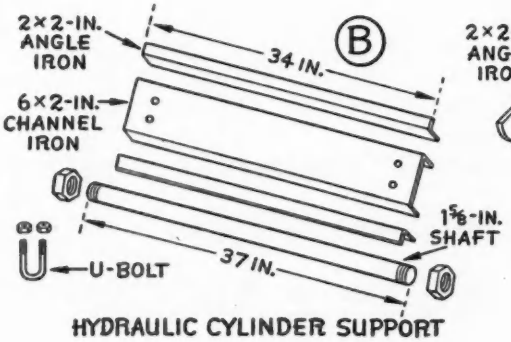
The lift is simply a fifth wheel carriage built on the frame of a yard tractor. The hydraulic elevating mechanism is of stock design, with a few modifications, and mounted so that it can be actuated from the cab. Two hydraulic cylinders raise the small size fifth wheel, so that the loaded trailer can be lifted to a safe height for movement around the dock or terminal.

Editor's note: If some fleets are not equipped to make this type of device, a similar hydraulic fifth wheel platform is available from C. E. Pollard, of Detroit. See the October issue of CCJ, page 47, for complete details.

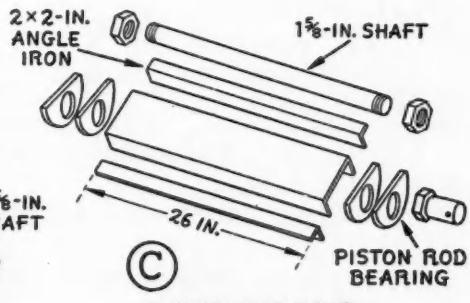




FRONT BOOM SUPPORT



HYDRAULIC CYLINDER SUPPORT

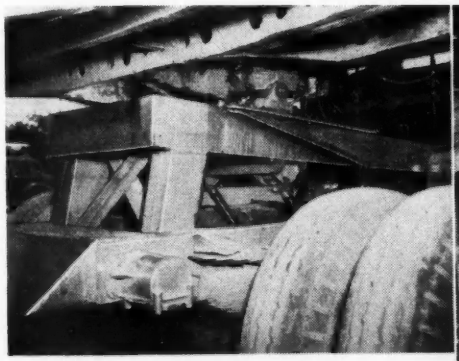


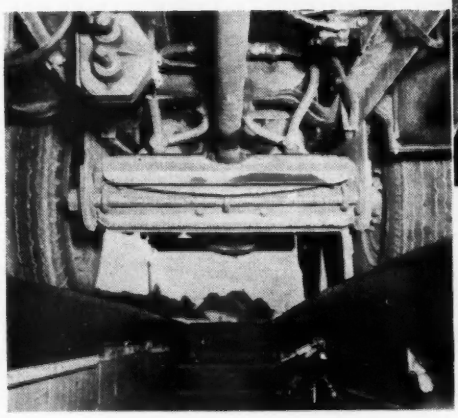
PISTON ROD SEAT

Platform is of 6-in. channel 82 x 26 in., hinged at front mounting boxed around frame just behind cab. Center support is channel iron to which is attached two dump body hydraulic pistons and cylinders. These are mounted on a cross beam supported on side plates welded to the truck frame. Fifth wheel is bolted to plate which is welded to platform

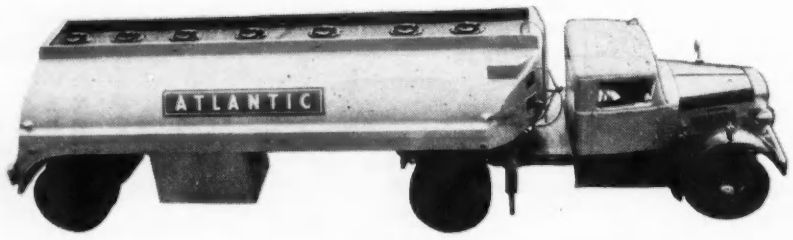
The tractor simply backs into the trailer king pin in the usual way. A light mounted on the instrument panel shows the driver that the fifth wheel is locked. A movement of the cab lever forward starts the hydraulic pump and raises the load. When the trailer is level (which means that the landing gear is from 8 to 12 in. off the ground, another light on the instrument panel tells the driver that the load is safe to move. He connects the hoses and is ready to roll.

(TURN TO PAGE 130, PLEASE)





UPPER LEFT. Channel iron frame guides lift over its travel. Angle iron on side provides a rest when down. ABOVE. Front support showing boxed construction, cross shaft, sleeves. LEFT. Support for hydraulic cylinders. Note cross shaft, U-bolts, channel iron crosspieces

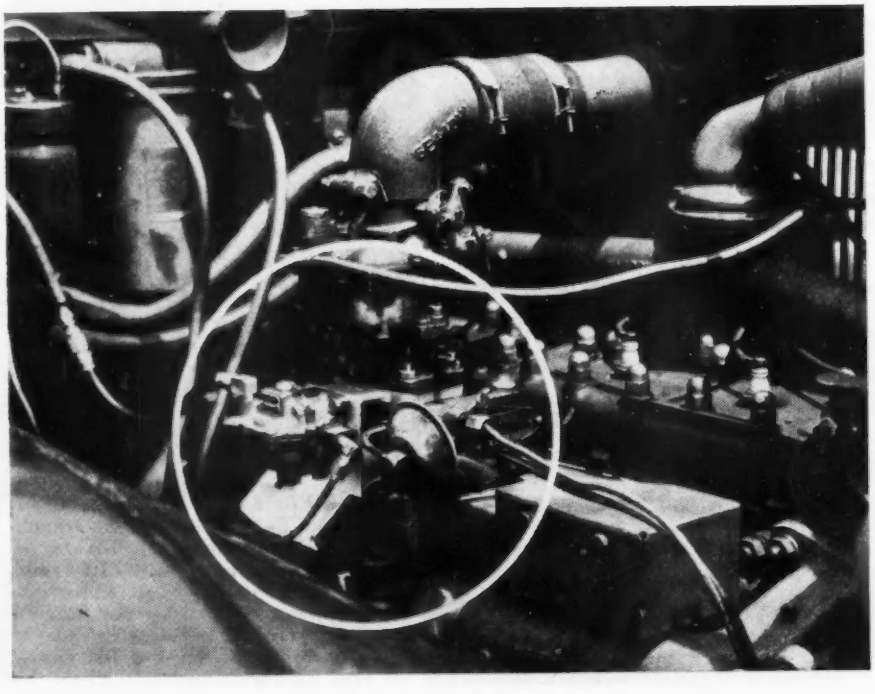


TEST TECHNIQUE*

for Alcohol-Water Injection

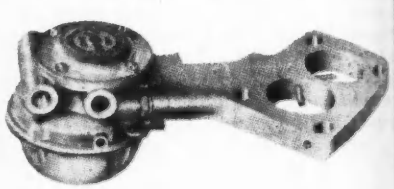
You have read about Vitameters but would you know how to calibrate, install and service them for a major test? This petroleum operator ran them nearly 3,000,000 miles

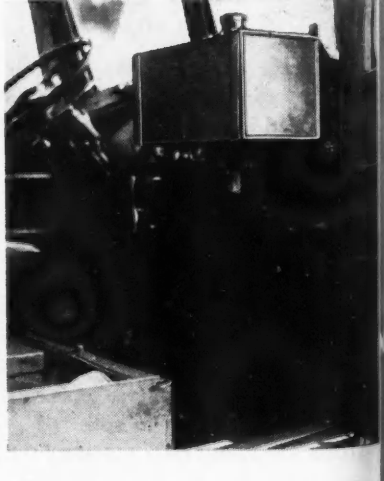
INJECTOR unit (below) installed on typical truck engine with downdraft carburetor. Note heat shield

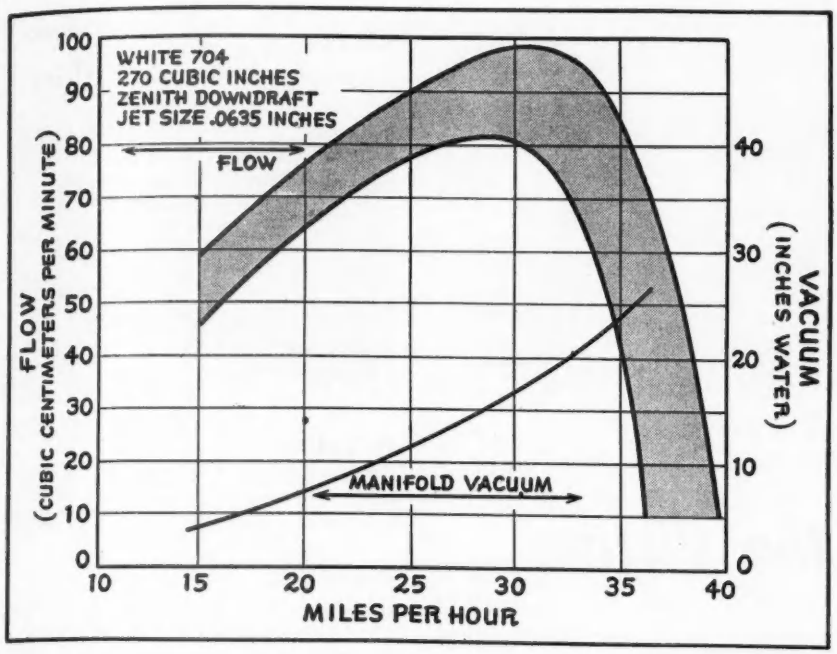


FLUID TANK (below right) was a problem. Best location was found to be in cab with good anti-fume seal

VITAMETER (below) is supplied in many types and sizes. This one obviously is for dual-throat carburetor







***GRAPH** was made up for each engine type to show desired rate of flow (upper and lower limits within shaded area) at varying manifold vacuum*

By Emil P. Gohn
Transportation Engineer
Atlantic Refining Co., Philadelphia

WHILE injection of water as an internal coolant is an old art, recent tests have indicated that alcohol-water injection is superior to water and that by introducing efficient anti-detonant compounds to the alcohol-water mixture, a boost in octane number may be obtained.

This discussion involves a test program carried out during 1947 and 1948 in our Philadelphia fleet involving some 188 vehicles. As the headline implies it is concerned more with the techniques involved in the test program rather than with the ultimate results achieved although a few of the latter are summarized in the box below and at the end of the article. It is hoped that the discussion may serve as a guide to other fleetmen interested in similar procedures.

These tests were made with an early version of the Thompson Vitameter (CCJ, January, 1948, page 46) and an injector fluid mixed at our own plant and discussed in detail below. It should be noted, however, that both the injector and the fluid, now marketed by Thompson Vitameter Corp. and known as "Vital," have undergone improvements and refinements since the time we made our tests. Because of these recent improvements it is reasonable to assume that the amount of injection fluid will be lower than the percentage quoted in this report.

Preliminary preparations for the test were somewhat involved. Since units of the fleet ranged from 5000 to 60,000 lb guw, the engine size and types had to be studied and cataloged as to operation characteristics. I might mention here that we are preponderantly a heavy truck fleet operator. The engines ranged from 207 to 707 cu in, and it became necessary to check representative units of the various groups for octane requirement, power and fuel consumption, injection rate and timing. Toward this end, we were fortunate to have available the chassis dynamom-

(TURN TO PAGE 136, PLEASE)

Test Statistics

Test Period	July 1, 1947 to July 1, 1948
Total Accumulated Test Miles Run	2,770,096
Gallons Fuel Used	819,275
Gallons of Injector Fluid (50% water, 50% iso-propyl alcohol)	49,938
Average Miles Per Gallon Fuel	3.39
Average Miles Per Gallon Fluid	59.1
Ratio of Fluid to Fuel	5.72
Alcohol Cost Added to Fuel Cost	1.72¢ per gal.

***QUANTITY** of injector fluid used warranted installation of separate pump at fuel island*

*Excerpted from a paper presented at the ATA Spring Meeting in St. Louis.

MURDER In the Fleet Field

. . . . the Victims

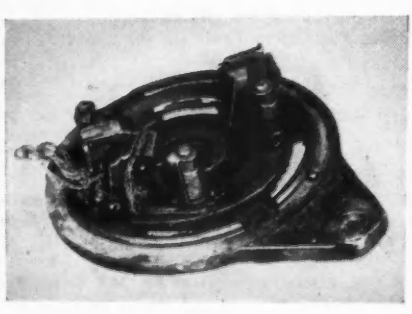
GENERATOR

REGULATOR

STARTER

The electrical department morgue is heaped with parts mutilated by conditions listed here. Care in operation and service pays off

Overcharge, improper adjustment, poor service and careless vehicle operation have ganged up on unwary fleets to "snag" savings and push up operating costs. Failures shown here are only typical of such conditions. In some cases it is difficult to pin down exact causes of breakdowns since they show up in various ways. Fleetmen experiencing failures like these, however, should check into causes and remedies as suggested in a move to eliminate recurrence.

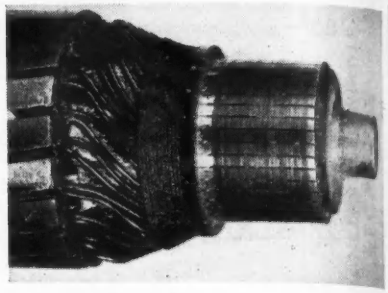


Cause:
Improper Maintenance *(left)*

Result:
Frayed brush leads, badly worn brushes, rough bearing surfaces, weak springs.

Remedy:
When brush leads become frayed and broken, poor electrical transfer results. Charge rate will be unsatisfactory. Bearings and brushes will wear prematurely. Clean parts and replace worn assemblies.

Cause:
Improper Armature Servicing



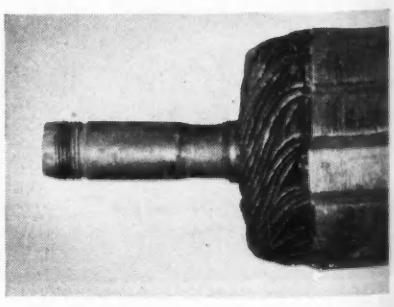
Result:
Commutator is dirty and greasy from over oiling and lack of cleaning. Slots are beginning to fill up, bars are grooved.

Remedy:
Clean generator periodically. Wash down bars with carbon tetrachloride, smooth bars with stone, sandpaper or turn down on a lathe, and cut back mica with a mica undercutter.

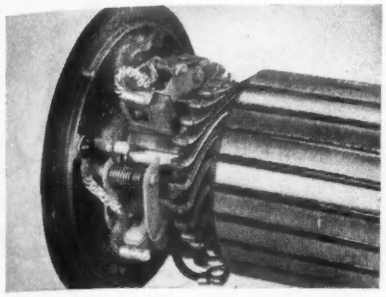
Cause:
Excessive Voltage

Result:
Solder has become melted and windings have been thrown. Insulation is burned.

Remedy:
This damage could have been caused by excessive charge rate or high resistance in the charging circuit. Faulty regulators will contribute to excessive generator output. Keep charge rate to manufacturer's specifications, inspect fields for damage.



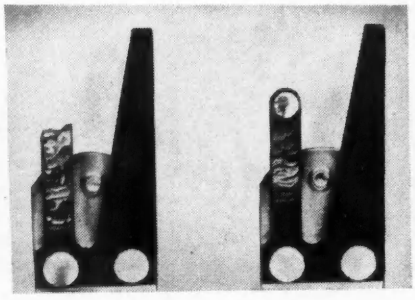
Cause:
Poor Brush Contact



Result:
Misaligned or weak springs apply uneven pressure to brushes, cause them to cock in holders and fail to seat properly. Uneven wear, arcing, noise and low charge rate results.

Remedy:
Install new springs and new brushes when they fail to test properly. Seat new brushes when installed.

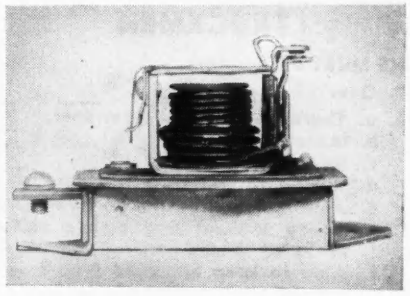
Cause:
Failure to Polarize Generator



Result:
Regulator armature points have burned, lost tension and have oxidized due to arcing.

Remedy:
Repolarize the generator whenever regulator or generator is replaced. Momentarily connect a jumper lead between the generator and the battery terminals of the regulator before starting the engine.

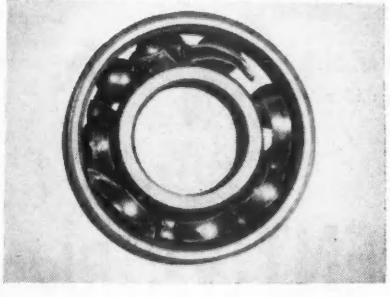
Cause:
Excessive Charge Rate



Result:
Regulator windings have become burned and charred. Points may be blue, pitted or welded together from excessive current.

Remedy:
Check for resistance in the charging circuit or grounded field. Limit charge rate to the capacity of the generator. Check regulator for proper operation.

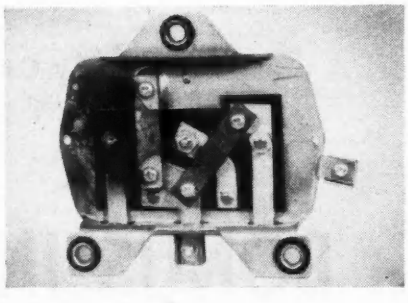
Cause:
Defective Shaft Bearings



Result:
Armature shaft with bearings worn to this extent will allow for misalignment and eventual field shorting. A noisy operation will result.

Remedy:
Inspect bearings when generator is down, replace either bushings or end plate assembly showing such wear. Lubricate as recommended by manufacturer.

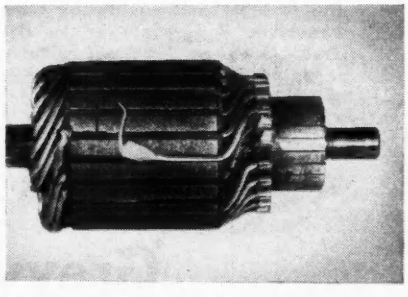
Cause:
Incorrect Hook-Up



Result:
Regulator has been subjected to excessive current through improper connection of leads. Resistors have been burned, and windings have been damaged.

Remedy:
Follow manufacturer's instructions for each type of regulator as coded on each make of regulator. Recheck hook-up before starting engine.

Cause:
Defective Starter Drive



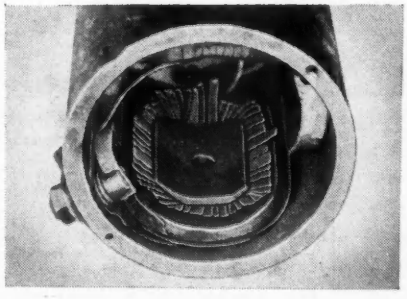
Result:
Thrown windings in starter armature due to excessive engine rpm to which starting motor was subjected when starting motor drive failed to disengage.

Remedy:
Replace overrunning clutch type drives when conditions indicate sticking. Be sure engine has stopped before depressing starter pedal.

Cause:
Improper Lubrication *(left)*

Result:
Armature shaft has worn to a point where armature will rub fields, resulting in noise, shorting and burning out of the generator.

Remedy:
Lubricate bearings periodically. Replace worn bearings and keep assembly clean.



Cause:
Overloaded Starter *(left)*

Result:
Excessive heat has burned insulation from fields, allowing a shorting through.

Remedy:
Do not engage starting motor for more than a few seconds at a time. Install battery with proper voltage for starter. Keep starter protected from excessive moisture.

(TURN TO PAGE 178, PLEASE)

QUALIFICATIONS REQUIRED OF GREYVAN TRUCKMEN

HE MUST BE:

1. Over 25 years of age.
2. a. Thoroughly honest—bondable.
   b. Industrious.
   c. Dependable.
   d. Willing to follow instructions.
   e. Able to handle large sums of money without acquiring a false sense of values.
   f. Able to keep his mind free from worry.
   g. Able to pass the physical examination required by the Interstate Commerce Commission.

HE MUST HAVE:

3. a. Good character—able to stand investigation.
   b. Good business sense.
   c. High fidelity to duty.
   d. Perseverance.
   e. Pride in doing his work well.
   f. Good sound native intelligence (which is far more important than a formal education).
4. In addition to these personal qualifications, he must have:
   a. A minimum of one year's experience in safe truck driving.
   b. Motor vehicle equipment (tractor and semi-trailer preferred) acceptable to Greyvan or be financially able to purchase acceptable vehicle and equipment from whomever and wherever he desires. Greyvan does not specify or require any particular make of vehicle.

By Carl Vaicek
Vice President, Greyvan Lines, Chicago

Greyvan BONUS INCENTIVE Plan

DATE PREPARED_____

SHIPPER'S REPORT ON:
ORDER NO._____
SHIPPER_____
ADDRESS_____
NATIONAL ACCOUNT_____
DATE UNLOADED_____
VAN NUMBER & OPERATOR_____

1. Contacted by General Office
2. May we have your answers to the following questions?
   A. Service by originating branch: Satisfactory_____
      Unsatisfactory_____
   B. Packing: Satisfactory_____ Unsatisfactory_____
   C. Loaded as scheduled:_____Yes___No_____
   D. Unloaded as scheduled:_____Yes___No_____
   E. Operator:
      1. Appearance: Satisfactory___Unsatisfactory_____
      2. Courteous:_____Yes___No_____
      3. Slip covers used:_____Yes___No_____
      4. Floor runners used:_____Yes___No_____
      5. Careful & Efficient handling:___Yes___No_____
      6. Barrels & cartons unpacked:____Yes___No_____
3. Your opinion as to Greyvan Service: Satisfactory_____
   Unsatisfactory_____
4. Have you any suggestions to improve our service:_____

_____
SIGNATURE

GREYVAN LINES INC.
CHICAGO

GEORGE O. WATSON
PRESIDENT

You can help us if you will.

Being a service organization, our most important function is to see that our shippers are completely satisfied. While we believe we offer the very finest long distance moving service available, we deem it advisable to check and determine that our high standards are being maintained.

Where we operate branch offices, we have the means of checking personally with our customers; however in cities where we do not have offices, we depend upon the mail to accomplish our purpose - hence this letter.

We will appreciate your comments. If your move has been a good one, we would like to hear about it. If our service has left something to be desired, we would like to hear that too so that we may take corrective measures.

A card and self addressed envelope is enclosed for your comments. We solicit your help in making what we feel is the finest long distance moving service even better.

Cordially yours,

GREYVAN LINES, INC.

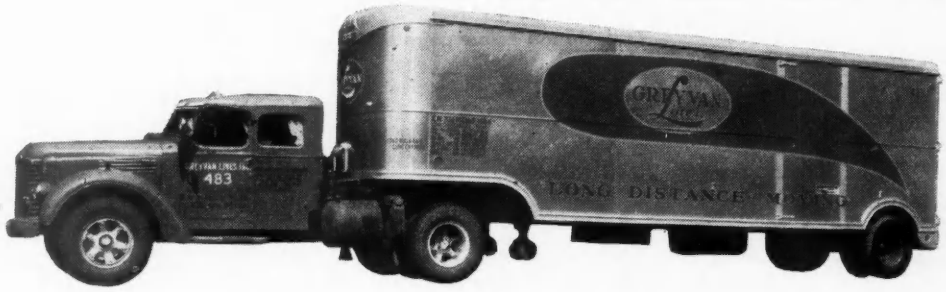
Geo. O. Watson
President

GOW/mb

P.S. Greyvan is celebrating its 21st year of service to the public.

Fig. 1 (Left) Shipper's report, 5½x11½ in., is filled out by one of the Greyvan branch offices into whose territory the shipment is unloaded

Fig. 2. When a shipment is unloaded in an area not covered by Greyvan branch offices, the customer gets this letter with a card (Fig. 3) inviting comments



GREYVAN LINES, INC.
CHICAGO

To Mr. George O. Watson
PRESIDENT

DATE_____
ORDER NO._____

DID YOU FIND GREYVAN SERVICE FRIENDLY AND COURTEOUS?

WAS YOUR PROPERTY HANDLED CAREFULLY AND EFFICIENTLY IN EVERY RESPECT?

WE WOULD APPRECIATE A SUGGESTION AS TO HOW WE CAN IMPROVE OUR SERVICE

I SUGGEST:

Fig. 3. This 3½x5½-in card is enclosed with a letter shown in Fig. 2. The information is used to determine a driver's eligibility for a bonus

Greyvan
SAFETYGRAM
VOLUME VI No. 7
April 15, 1949
THESE ARE GOOD SIGNS!
IT PAYS TO BELIEVE IN SOME SIGNS!
GREYVAN LINES, INC. • 57 W. GRAND AVE. • CHICAGO 10, ILL.

Fig. 4 (Right). This is a sample of Greyvan's Safetygram mailed to all drivers to keep them safety conscious and help keep insurance rates down

an Pays Three Ways

Driver-owners can earn up to 3% of total gross revenue of their loads; customers get better service; and fleet's business booms as insurance rates hit record low

USE OF INDEPENDENT contractor drivers plus a workable incentive plan have proved to be the best solution at Greyvan Lines, Inc., Chicago, to the problem of obtaining and keeping the top quality drivers necessary for maximum service to the customer.

Incentive pay scales for wage workers are common in the trucking industry. However, as far as we can determine, Greyvan is the only truck line in the moving industry, and perhaps in the entire field of motor transportation, which has developed an incentive plan for independent contractors.

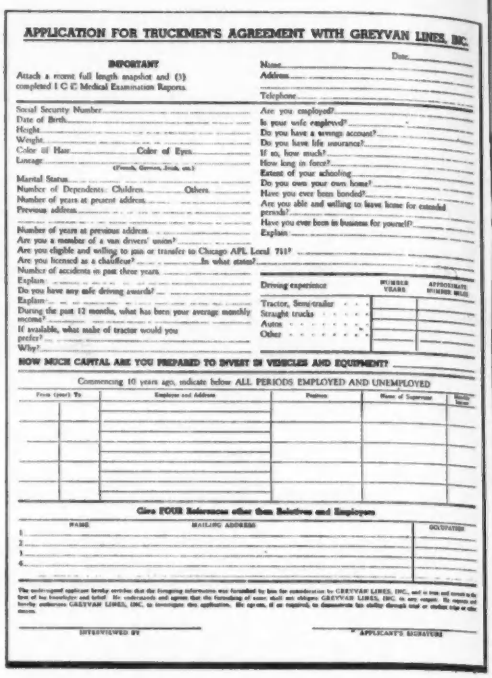
This independent contract method of operation is a major contributing factor to Greyvan's position as one of America's largest long-distance moving firms—a company now doing an annual business of better than $4,000,000.

In our 21-year history, we have tried nearly every other method of fleet operation. Our present arrangement is the only one that has met with wholehearted satisfaction all down the line. We have operated an entirely-owned company fleet, a partially-owned company fleet with some independent contractors, and through agents. None of these methods provided us with the flexibility of opera-

(TURN TO NEXT PAGE, PLEASE)

Greyvan BONUS INCENTIVE Plan . . .

(Continued from page 81)



APPLICATION FOR TRUCKMEN'S AGREEMENT WITH GREYVAN LINES, INC.

IMPORTANT

Attach a recent full length snapshot and (3) completed I C C Medical Examination Reports.

Name
Address
Telephone
Date
Social Security Number
Date of Birth
Height
Weight
Color of Hair
Color of Eyes
Lineage
Marital Status
Number of Dependents: Children
Others
Number of years at present address
Previous address
Number of years at previous address
Are you a member of a van drivers' union?
Are you eligible and willing to pass or transfer to Chicago AFL Local 710?
Are you licensed as a chauffeur?
In what states?
Number of accidents in past three years
Explain
Do you have any safe driving awards?
Explain
During the past 12 months, what has been your average monthly income?
If available, what make of tractor would you prefer?
Why?
Are you employed?
Is your wife employed?
Do you have a savings account?
Do you have life insurance?
If so, how much?
How long in force?
Extent of your schooling
Do you own your own home?
Have you ever been bonded?
Are you able and willing to leave home for extended periods?
Have you ever been in business for yourself?
Explain

Driving experience	NUMBER YEARS	APPROXIMATE NUMBER MILES
Tractor, Semi-trailer		
Straight trucks		
Autos		
Other		

HOW MUCH CAPITAL ARE YOU PREPARED TO INVEST IN VEHICLES AND EQUIPMENT?

Commencing 10 years ago, indicate below ALL PERIODS EMPLOYED AND UNEMPLOYED

From (year) To	Employer and Address	Position	Name of Supervisor	Reason for Leaving

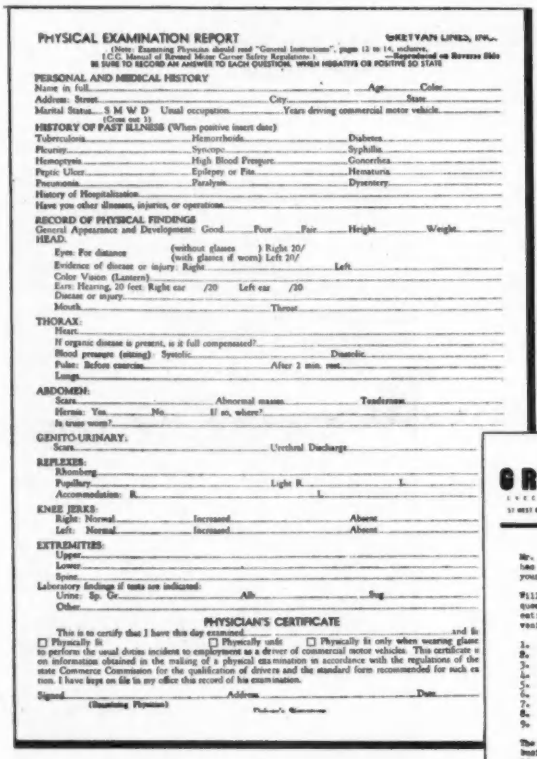
Give FOUR References other than Relatives and Employers

NAME	MAILING ADDRESS	OCCUPATION
1.		
2.		
3.		
4.		

The undersigned applicant hereby certifies that the foregoing information was furnished by him for consideration by GREYVAN LINES, INC., and is true and correct to the best of his knowledge and belief. He understands and agrees that the furnishing of same shall not obligate GREYVAN LINES, INC. in any respect. He agrees and hereby authorizes GREYVAN LINES, INC. to investigate this application. He agrees, if so required, to demonstrate his ability through trial or written test of the matters.

INTERVIEWED BY

APPLICANT'S SIGNATURE



PHYSICAL EXAMINATION REPORT

GREYVAN LINES, INC.

(Note: Examining Physician should read "General Instructions", pages 12 to 14, inclusive, I.C.C. Manual of Motor Carrier Safety Regulations.) —Reproduced on Reverse Side

BE SURE TO RECORD AN ANSWER TO EACH QUESTION. WHEN NEGATIVE OR POSITIVE SO STATE

PERSONAL AND MEDICAL HISTORY

Name in full
Age
Color
Address: Street
City
State
Marital Status: S M W D
Usual occupation
Years driving commercial motor vehicle
(Cross out 1)

HISTORY OF PAST ILLNESS (When positive insert date)

Tuberculosis
Hemorrhoids
Diabetes
Pleurisy
Syncope
Syphilis
Hemoptysis
High Blood Pressure
Gonorrhea
Peptic Ulcer
Epilepsy or Fits
Hematuria
Pneumonia
Paralysis
Dysentery
History of Hospitalization
Have you other illnesses, injuries, or operations

RECORD OF PHYSICAL FINDINGS

General Appearance and Development: Good
Poor
Fair
Height
Weight
HEAD:
Eyes: For distance (without glasses) Right 20/ (with glasses if worn) Left 20/
Evidence of disease or injury: Right
Left
Color Vision (Lantern)
Ears: Hearing, 20 feet: Right ear /20 Left ear /20
Disease or injury
Mouth
Throat
THORAX:
Heart
If organic disease is present, is it full compensated?
Blood pressure (sitting): Systolic
Diastolic
Pulse: Before exercise
After 2 min. rest
Lungs
ABDOMEN:
Scars
Abnormal masses
Tenderness
Hernia: Yes
No
If so, where?
Is truss worn?
GENITO-URINARY:
Scars
Urethral Discharge
REFLEXES:
Rhomberg
Pupillary: Light R.
L.
Accommodation: R.
L.
KNEE JERKS:
Right: Normal
Increased
Absent
Left: Normal
Increased
Absent
EXTREMITIES:
Upper
Lower
Spine
Laboratory findings if tests are indicated:
Urine: Sp. Gr.
Alb.
Sug.
Other

PHYSICIAN'S CERTIFICATE

This is to certify that I have this day examined and fi
☐ Physically fit ☐ Physically unfit ☐ Physically fit only when wearing glass
to perform the usual duties incident to employment as a driver of commercial motor vehicles. This certificate i
on information obtained in the making of a physical examination in accordance with the regulations of the
state Commerce Commission for the qualification of drivers and the standard form recommended for such ex
tion. I have kept on file in my office this record of his examination.

Signed
(Examining Physician)
Address
Date
Driver's Signature

Fig. 5 (Right). This is the application form Greyvan uses for prospective driver-owners. Size: 8½x11

Fig. 6 (Left). Every applicant gets a very thorough medical examination. Reverse side of this form (8½x11) contains instructions to doctor

GREYVAN LINES INC

EXECUTIVE OFFICES

57 WEST GRAND AVENUE, CHICAGO 10, ILLINOIS

Mr.
residing at
has applied to us as
and has given your name as reference.

Will you kindly advise us promptly concerning the following questions so that immediate consideration may be given his application? A stamped addressed envelope is enclosed for your convenience in replying.

1. How long have you known applicant?
2. If ever employed by you would you consider him for re-employment?
3. Is he a disturber or agitator?
4. Are his personal habits good?
5. Does he honor his obligations and live within his income?
6. Is he a safe driver of a truck?
7. Do you consider applicant an ambitious and good worker?
8. Is he a habitual drinker?
9. Do you consider this man to have good business sense?

The reason for requesting the above information is to determine the good business sense that is necessary for applicant to have in order to operate his own business successfully.

Any other information which you may feel free to give us regarding this applicant will be appreciated and held in strict confidence.

Yours very truly,

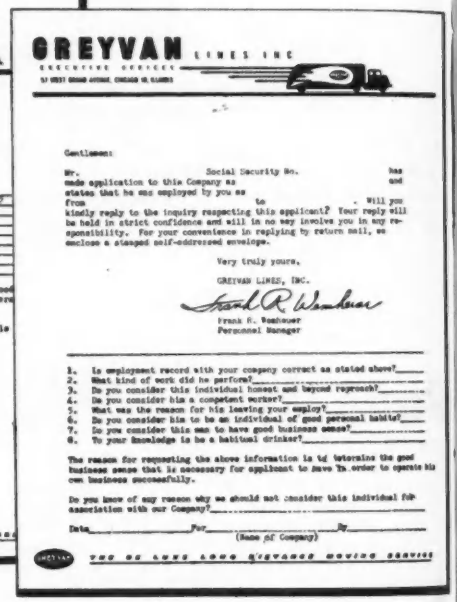
GREYVAN LINES, INC.

Frank R. Wambaugh
Personnel Manager

FRW/ahr
Encls.

YOU GO LONG LONG DISTANCE MOVING SER

Fig. 7. All references given are checked. This form is for personal references



GREYVAN LINES INC

EXECUTIVE OFFICES

57 WEST GRAND AVENUE, CHICAGO 10, ILLINOIS

Gentlemen:

Mr. Social Security No. has made application to this Company as and states that he was employed by you as from to . Will you kindly reply to the inquiry respecting this applicant? Your reply will be held in strict confidence and will in no way involve you in any responsibility. For your convenience in replying by return mail, we enclose a stamped self-addressed envelope.

Very truly yours,

GREYVAN LINES, INC.

Frank R. Wambaugh

Frank R. Wambaugh
Personnel Manager

1. Is employment record with your company correct as stated above?
2. What kind of work did he perform?
3. Do you consider this individual honest and beyond reproach?
4. Do you consider him a competent worker?
5. What was the reason for his leaving your employ?
6. Do you consider him to be an individual of good personal habits?
7. Do you consider this man to have good business sense?
8. To your knowledge is he a habitual drinker?

The reason for requesting the above information is to determine the good business sense that is necessary for applicant to have in order to operate his own business successfully.

Do you know of any reason why we should not consider this individual for association with our Company?

Date For By
(Name of Company)

YOU GO LONG LONG DISTANCE MOVING SERVICE

Fig. 8. For employment references, Greyvan uses this letter. Both forms stress fact that the applicant will operate his own busines

tion and the driver responsibility which we considered necessary for peak efficiency and service.

Since adopting the independent contract method of operation for our entire system, our goal has been to procure the best drivers available, in the belief that in this way our company can offer better service. But good drivers are seldom attracted to a company merely by a fast sales talk. If they are, it takes something more substantial than talk to keep them satisfied on the job.

Bonus Plan Pays Three Ways

THAT'S where our incentive plan comes into play. We try to keep our drivers satisfied by giving them a chance to earn substantially more than they could working anywhere else in the industry. Having satisfied drivers doing their best usually means satisfied customers. This is indicated by the fact that our customers' surveys show 98 per cent satisfaction with our service. We consistently receive repeat business from customers originally impressed by our ambassadors of good will—our drivers.

Through the incentive program, drivers can earn extra compensation ranging up to 3 per cent of the total gross revenue of their loads. This, of course, is in addition to their regular independent contract rate which parallels that in the industry.

The success of our driver program is proved by the fact that our claim record is excellent enough to provide

(TURN TO PAGE 116, PLEASE)

A Systematized Fleet Safety Program

BY THE BUREAU OF HIGHWAY SAFETY .... NATIONAL COUNCIL OF PRIVATE MOTOR TRUCK OWNERS, INC., WASHINGTON, D. C.

The Why and How

of Accident Reports & Records

The Why — SAFETY TEXT • NUMBER II

THE results of motor vehicle fire accidents are so grave that every practical means should be employed to prevent the occurrence of fires either in connection with or as the sole cause of accidents. By so doing, fleet owners may save human lives and countless dollars of property damage.

Any step that can be taken to decrease the likelihood of vehicle fires—and to decrease their severity—is a MUST in any successful highway safety program.

Frequent fire losses are indicative of poor equipment maintenance, improper driving habits or inadequate driver training and supervision.

In addition to accidents resulting from collision, overturn and running off the road, motor vehicle fires are usually caused by defective or improper wiring, a defective fuel system, improper loading of cargo, inflammable materials on the engine, accumulated waste and trash in the vehicle, faulty mechanical adjustments or workmanship, bad driving practices, or *just plain carelessness.*

The best means of preventing vehicle fires include proper and complete inspection of equipment, education of the driver as to fire causes and special training in the eliminaton of such causes, and providing the driver with adequate and effective fire-fighting equipment along with full information as to its proper use.

Although an adequate maintenance and inspection program will disclose most fire hazards, particular attention should be given to mechanical defects or failures which CAN cause fires. In this connection, special emphasis should be placed upon tire, fuel line, and wiring maintenance.

To avoid fires or to minimize their consequences, it is also necessary to have drivers well trained in the application of established safety practices.

Management must teach its drivers to observe the "rules of the road"; to know what to do in any emergency; to be aware of their responsibilities to the public. It must provide and promote the use of adequate fire-fighting equipment, sponsor instruction in the proper use of fire extinguishers by drivers, and educate the drivers in their responsibilities toward their employers and the publc when fire breaks out.

Some helpful "tips" in the prevention and control of motor vehicle fires are set forth in the following Instructions (or "HOW") of this article.

(TURN TO NEXT PAGE, PLEASE)

No. II FIRE PREVENTION, CONTROL

MOTOR vehicle fire prevention and fire fighting involves a variety of factors which may be classified as follows:

1. **Fires originating in the vehicle itself during normal operation.**
2. **Fires originating in the cargo of the vehicle.**
3. **Fires originating from an outside source but endangering both vehicle and cargo.**
4. **Fires resulting from highway accidents.**

Methods and suggestions for combating these various hazards will be described briefly in their respective order.

1. Preventing Fire in the Vehicle Itself:

FUEL SYSTEMS—When open flame or other high temperature ignition sources are involved, gasoline probably presents the greatest single fire hazard in motor truck operations but, with proper preventive maintenance and operating practices, losses from this source may be controlled and reduced to a bare minimum.

It must be remembered that one pint of gasoline, when vaporized, produces about 25 gallons of pure vapor, or 56 — 222 cubic feet of vapor-air explosive mixture. Thus, even small leaks may produce sufficient vapor to be dangerous.

Fuel lines must be inspected frequently and all connections made tight.

The carburetor should not be primed while the engine is hot. If the carburetor is over-choked and the engine does not start immediately, any gasoline overflow may be ignited by a back-fire.

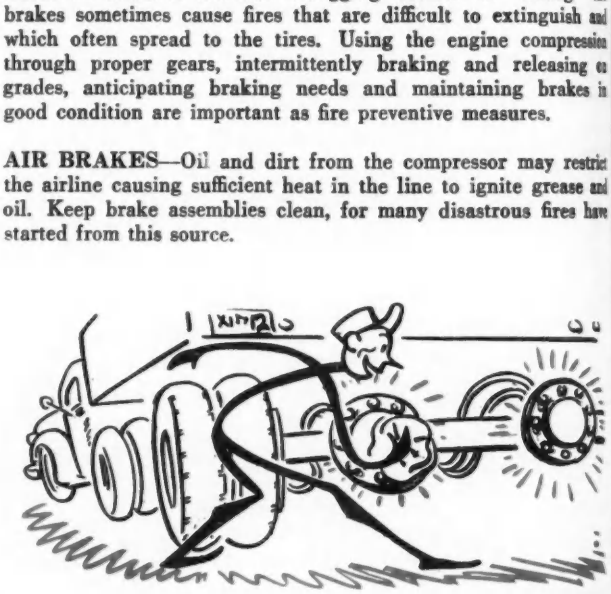
When working around a faulty fuel system or when fueling a vehicle, smoking or the use of matches, flares or other open flame is exceedingly dangerous and foolhardy.

Washing off oil and grease with gasoline is also dangerous. Steam cleaning is safer.

GREASE AND OIL—Grease and oil around the motor drive invites fires. An accumulation of oily rags and waste left lying around in the cab, tool box, or any part of a vehicle are easily ignited from cigarette, cigar or pipe ashes or sparks from faulty wiring. Fires of this kind often smolder undetected for a long time and develop into an open flame after the vehicle is left unattended. Proper "housekeeping" by the driver is one of the best precautions for fire prevention.

BRAKE DRUM FIRES—Dragging brakes or "riding" the brakes sometimes cause fires that are difficult to extinguish and which often spread to the tires. Using the engine compression through proper gears, intermittently braking and releasing on grades, anticipating braking needs and maintaining brakes in good condition are important as fire preventive measures.

AIR BRAKES—Oil and dirt from the compressor may restrict the airline causing sufficient heat in the line to ignite grease and oil. Keep brake assemblies clean, for many disastrous fires have started from this source.



SOFT TIRES—Frictional heat generated by soft or improperly inflated tires may be carried away by the air flow when a vehicle is in motion, but burst into flames upon stopping and quickly involve the vehicle and its cargo. Fires from this cause can also occur while the vehicle is in motion.

If a driver is alert to the behavior of his vehicle on the road and inspects his tires at proper intervals during long trips, overheated tires may be detected before a fire is involved.

EXHAUST SYSTEMS—Where there is an insufficient clearance between the exhaust line and floor boards, the latter must be shielded to prevent fires. Tarpaulins dangling over an exhaust line are another ready source of fire.

ELECTRICAL EQUIPMENT—Defective wiring, inadequate grounding, improper fuses, etc., are the causes of many vehicle fires.

Battery ground connections should be checked for secure attachment, as poor grounding may throw an overload on some part of the electrical system and result in fire. The battery cover, mounting and connections also should be checked frequently. In

transit, a loose cover, forgotten tools or other metal objects on the battery may cause a short-circuit and resulting fire.

Worn battery cables, broken or frayed ignition or lighting wires, corroded and poorly insulated wiring or connections should be replaced promptly.

FUSEES—Fusees should be protected so as to prevent detachment of guard covers. For when accidentally ignited, they produce a severe fire difficult to control.

STATIC ELECTRICITY—When fueling vehicle tanks, a metal-to-metal contact should be maintained between the hose nozzle and tank filler pipe.

When filling trucks with flammable liquids at loading platforms, a serious hazard exists unless static bonding wires are attached before the filling starts and not removed until the filling is completed and the dome covers replaced.

SMOKING HAZARDS—Smoking in the cabs of trucks, other than those laden with inflammables or explosives, can be no more dangerous than in your private automobile provided due precautions are taken. Matches or burning tobacco falling onto seat cushions, into the window space in the door, or onto any flammable material in the cab can cause a fire; sparks may ignite materials on the shelf behind the driver, in the sleeper berth, or in the cargo or its covering if burning materials are thrown out of the window.

Such hazards may be minimized by furnishing dashboard lighters and ash trays for the driver and cautioning him aganst carelessness.

2. Fire Originating in the Cargo:

LOADING—Cargoes must be properly loaded and secured to meet fire hazards. Precautions should be taken during loading and unloading operations against careless handling and to prevent fire due to smoking or the faulty disposal of matches and smoker's materials.

FLAMMABLE CARGOES—Although special Federal and State rules and regulations govern the transportation of flammables, explosives, compressed gases and other dangerous articles, truck operators must realize that they have an extraordinary responsibility to the public, their employees and to themselves for the safe handling and transportation of such cargoes. They must exercise great care in the selection, and particularly in the training, of their drivers and in the proper design and maintenance of their equipment.

Drivers must exercise extreme care at all times. Carelessness, ignorance and neglect of the special hazards incidental to the handling of such dangerous cargoes on the public highways cannot be tolerated. Drivers must not smoke or permit others to smoke or use matches near the vehicle. They must know what to do in any emergency. They should give their equipment a careful safety check prior to each trip. They should be thoroughly conversant with the safety regulations applicable to the transportation of their particular cargoes and, insofar as their duties are concerned, follow these regulations and their own company's safety rules explicitly.

LEAKING CONTAINERS—Tanks of flammable or corrosive liquids and drums or other containers which are found to be leaking should not be moved on the highway. Where leaks develop in transit, the course of action should depend upon the extent of leakage. If the leak is very small, it may be desirable to continue to the nearest point at which the container or cargo may be disposed of with safety. If the leak is of serious proportion, however, the vehicle should be taken as far off the highway as possible and every effort made to prevent the spread of the leaking commodity. A trench should be dug to prevent the flow of the dangerous material onto the highway or into a sewer. Gasoline in a sewer, for example, may cause a serious explosion and fire wherever the vapors become exposed to ignition. In cases of this sort, spectators should be kept as far away as possible from the vehicle and its cargo, and the highway patrol, police or fire department should be notified without delay.

MIXED CARGOES—Drivers, loaders, warehousemen and other employees should be familiar with all of the prescribed transport regulations that forbid combining in one load those substances which are likely to produce a fire when coming in contact with each other. These rules—the ICC regulations in particular—describe the proper packing and handling provisions for all highly flammable materials and, where followed, the risk is reduced to a minimum.

OTHER SPECIAL HAZARDS—Special consideration should be given to the loading and handling of materials that are subject to spontaneous combustion or ignition, such as finely divided combustible solids, vegetable oils, etc. Such materially require special handling and the necessary precautions should be "tailor-made" to fit the specific hazards to be encountered.

Where heaters are used to prevent the freezing of perishable cargo in winter weather, they should be secured carefully with proper clearance to insure against ignition of the cargo.

Special precaution and inspection are needed where flammable refrigerants are used in the cold compartments of refrigerator trucks. Drivers of such vehicles should be well informed as to what to do in the event of leakage.

Smoking should not be permitted or motors kept running while spray-painting vehicles.

3. Fires Originating From an Outside Source:

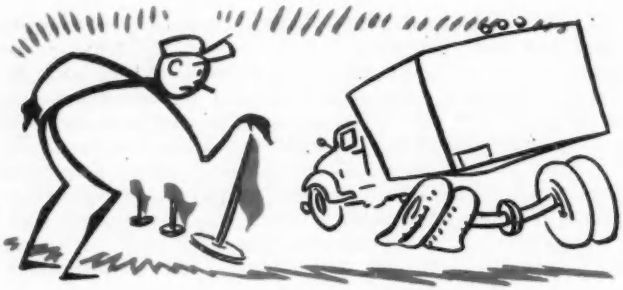
IMPROPER PARKING—Parking a vehicle near incinerators, where welders are working, or near other sources of fire is a bad practice and should be so recognized by all prudent drivers. Special precautions against parking in unsafe places are necessary, especially when flammable or dangerous cargo is involved.

SPARKS—Guard against sparks from wind-blown brush fires, burning leaves, and other conflagrations along the highways.

Carbon collected in the motor may also blow out as sparks, causing a fire hazard in the garage or on the road.

(TURN TO NEXT PAGE, PLEASE)

THE **How** CONTINUED



4. Fire Hazards Resulting From Accidents:

ALL collisions or upsets present a fire hazard. In such cases, the motor ignition should be turned off IMMEDIATELY. This is so vitally important that some vehicles are now being equipped with automatic collision or upset cut-off swtches

In the event of an accident involving any motor vehicle transporting compressed gases, combustible solids, explosives, flammable or corrosive liquids, the greatest caution must be observed to prevent fire. Only persons specially trained and employed in the removal of such hazards or wreckage should be allowed near the vehicles. Warning devices, such as flags, reflectors or electric lanterns, should be set out immediately. If leaking flammables are present, make sure that there is no open flame nearby and that there is no hazard of vapors drifting downwind or down hill toward any possible source of ignition. This is a highly important factor and must not be overlooked.

Fire Control

DRIVERS must be trained to act quickly and to choose the most effective means of extinguishing any type of fire that may arise.

The means of fire control customarily at the driver's disposal for use in fighting various types of fires include fire extinguishers (of both the vaporizing liquid and carbon dioxide types), sand, water, and blankets.

Assistance from the local fire departments must be sought in some cases, but it is unwise to depend entirely upon aid from this source.

SAFETY INSTRUCTIONS

In This Highway Safety Program for Commercial Vehicle Operators

THIS ISSUE: Fire Prevention

PRECEDING ISSUES:

- Management Responsibility
- Driver Responsibility
- Driver Selection, Training and Supervision
- Accident Reports and Records
- Human Engineering
- Visual Information . . . Contents . . . Awards
- Group Safety Meetings . . . Development of Safety Committees
- First Aid Training
- Conservation of Equipment
- Unusual Highway Hazards

NEXT ISSUE:

- Safety Through Courtesy . . . Defensive Driving

Your Own Highway Safety Program

This and other installments are arranged for easy removal and insertion in standard three-ring binder. Save them! Use them!

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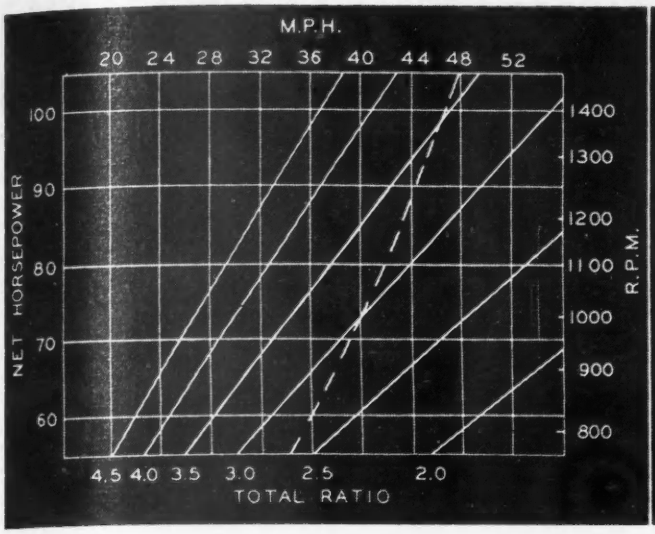


FIG. 1. Chart showing horsepower required with various gear ratios to maintain road speeds as listed top of graph. Values are theoretical

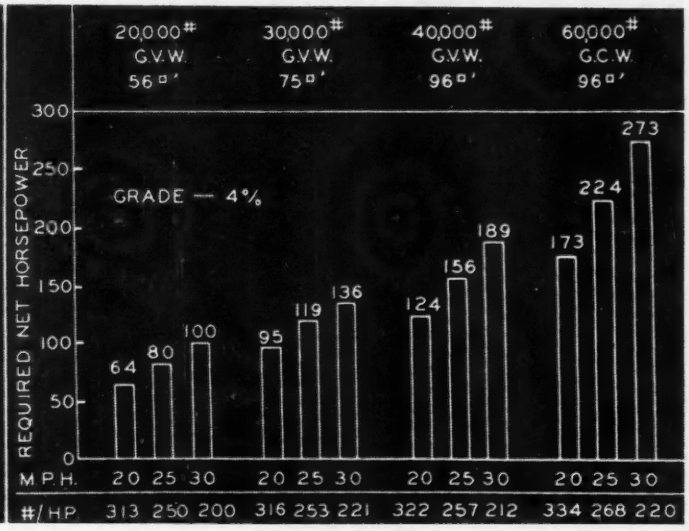


FIG. 2. Horsepower required to negotiate a 4% grade at 20, 25, 30 mph with various GVW's and with pounds-per-hp-ratio as outlined

WHAT PRICE HORSEPOWER?*

Increased performance ups costs, yet small horsepower improvements may be expected. Proposed formulas for grade ability are fantastic for big jobs.

By Merrill C. Horine
Sales Promotion Manager Mack Manufacturing Corp.

HORSEPOWER has steadily increased in motor trucks and tractors even since the early beginning of the industry and at a rate appreciably greater than increases in gross weights. Consequently the net result has been progressive increases in horsepower per ton of gross weight. This trend shows no signs as yet of levelling off. Yet surely the time must come when further power increases will cease to pay. To speculate on just at what point this levelling off will occur requires that consideration be given to the objectives sought in the persistent upward trend.

A truck earns only as it produces ton-miles; but an important part of its costs go on with time, regardless of the rate at which it produces them. The greater the number of ton-miles reeled off in a day by each vehicle, the lower the unit cost. Ton-mileage can be increased in only two ways—more tons per load or more loads per day; more payload or more speed or both. There are limitations on both.

Looking at the items of operating cost it will be evident that the economy expected from bigger loads cannot be realized if the operating rate decreases in proportion to the load increase. For example, if the chassis as a truck moves 7-ton loads 200 miles per day for $60.00 while as a tractor or six-wheeler it moves 12-ton loads 135 miles for $70.00, then the greater load capacity of the combination nets no gain for the operator. If, on the other hand the 12-ton payload can be moved the same 200 miles distance per day, the cost would have to rise to $102.00 before parity would be reached and a cost of $80.00 per day would net an extra net return of $22.00.

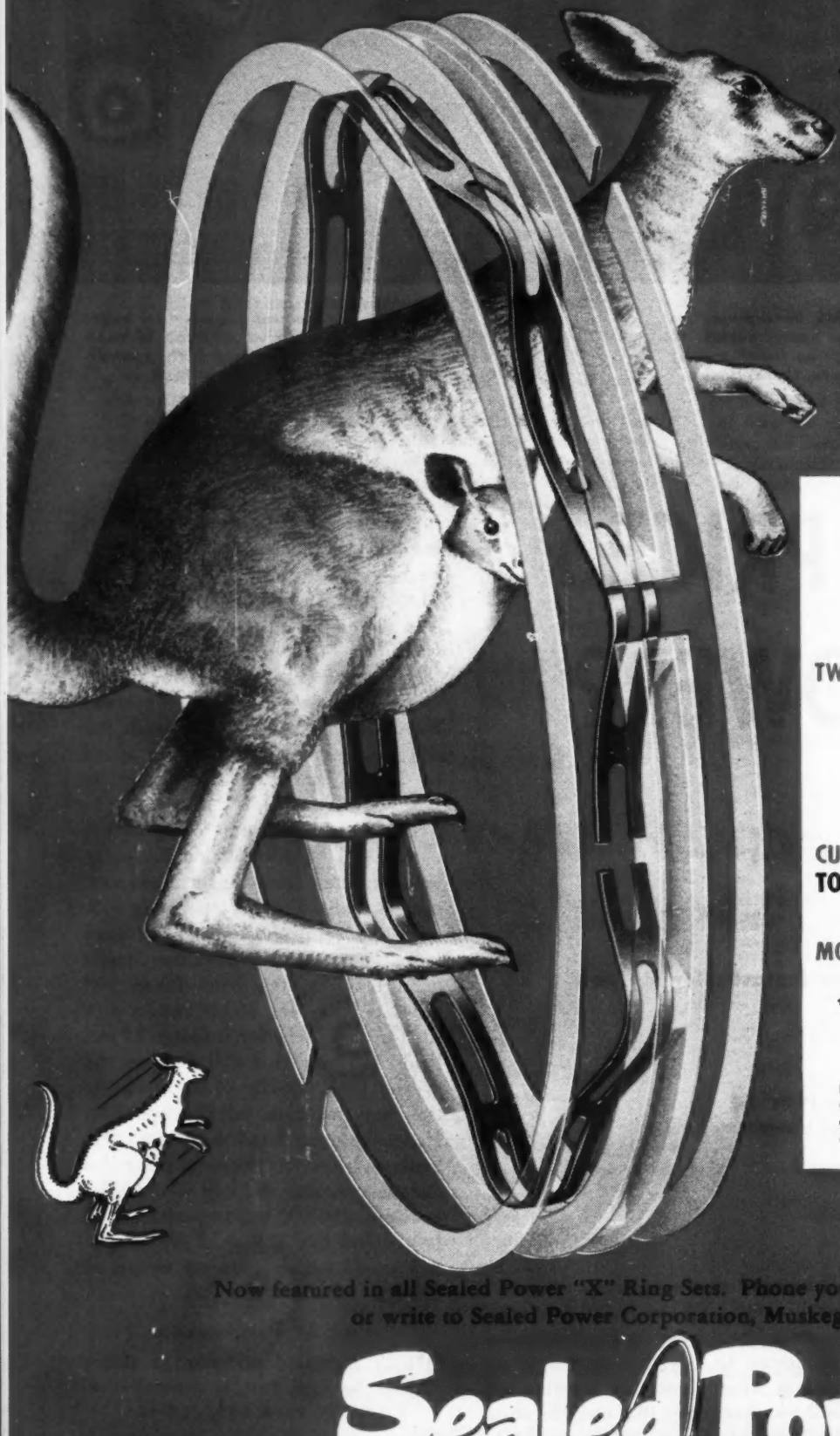
Cost of Performance

THAT increased performance ability does increase cost is generally as-

(TURN TO PAGE 164, PLEASE)

* Excerpted from a paper presented at the SAE Summer Meeting at French Lick.

FLEET OWNERS JUMP PERFORMANCE RECORDS with Sealed Power MD-50 Steel Oil Ring!



THE ONLY RING WITH THE FULL-FLOW SPRING

Better oil economy! Easier starting! Longer life! These are the reasons Sealed Power MD-50 Steel Oil Ring has jumped into high favor with leading fleet owners everywhere. They say it's the greatest steel oil ring ever built. They say Sealed Power Ring Sets with the MD-50 last many extra thousands of miles between ring changes. Because this is the only ring with the FULL-FLOW SPRING, it offers you many exclusive advantages, including:

FULL FLOW OF OIL

THROUGH RING

THROUGH SPRING

THROUGH PISTON OIL HOLES

TWICE AS MANY SLOTS FOR OIL DRAINAGE

Single-slot spring

Full-Flow Spring

CURVES INSTEAD OF HUMPS TO INSURE UNIFORM POSITIVE PRESSURE

MORE BEARING AREA FOR LONGER LIFE

Insures longer life for ring and spring. Greater flexibility means easier starting. Works perfectly even in tapered and out-of-round bores.

Now featured in all Sealed Power "X" Ring Sets. Phone your Sealed Power distributor or write to Sealed Power Corporation, Muskegon, Michigan.

Sealed Power

PISTON RINGS

BEST IN NEW TRUCKS! BEST IN OLD TRUCKS!

Truck Specifications Table

OF CURRENT PRODUCTION MODELS

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY

COMMERCIAL CAR JOURNAL

Key to Definitions, References and Abbreviations

DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost, if it differs from the standard size. Dual rears are understood; exceptions noted.

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Converted Ford or Chevrolet Model.

(2) International Harvester—Specifications shown represent only the basic standard chassis units and standard chassis ratings in keeping with definitions established by Commercial Car Journal. Optional units not shown such as engines, clutches, transmissions, axles or axle ratios, brakes, wheels and tires, frames or frame reinforcements, optional wheelbases or any other units which make up part of the truck chassis and which International will furnish and approve from the factory as optional equipment can or will change either the ratings, chassis weight shown or performance of the truck as indicated by this list.

(a)—Available with Two-Speed Axle designated KBS Models.

KEY TO ABBREVIATIONS

MAKES—ALL

B—Bendix
BL—Brown-Lipe.
Bu or Bud—Buda.
BW—Bendix-Westinghouse
C—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
Eat—Eaton.
F—Ford.
Fu—Fuller.
H—Hotchkiss.
Her—Hercules.
HS—Hall-Scott.
L—Lockheed.
LH—Lockheed front, Wagner "hi-Tork" rear.
LW—Lockheed front, Wisconsin rear.
M—Midland.
N.P.—New Process.
O or Ow—Cwn.
Op or Opt—Optional.
Shu—Shuler.
Spi—Spicer
T or Tim—Timken-Detroit Axle Co.
Tw—Timken-Detroit—Westinghouse.
TW—Timken-Detroit—Wisconsin.
WG—Warner Gear.
Wau—Waukesha.
W or Wis—Wisconsin.
Wg—Wagner.
Ws—Westinghouse.
WW—Westinghouse or Wagner

WHEELS DRIVEN

2F—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group
4R—Forward and rear units of Rear Axle Group.
—All wheels.

BRAKES—SERVICE

Location

4—Four Wheels, front and rear.
4r—Four Wheels, rear only.

Type

I—Internal.
X—External.

Operation

A—Air.
H—Hydraulic.
V—Vacuum.
D or Dp—Dual Primary

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
6—Six wheels.
P—Back of Power Divider.
J—Jackshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
M—Mechanical.
X—External.
PD—Two drums on rear of power divider.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Foundry
c—Cast iron.
Cc—Composite Front, Cast Iron in rear.
Ce—Centrifuse.
Cl—Copper iron.
Co—Composite.
D—Dayton.
E—Ermalite.
G—Gunite.
N—Nickel iron.
S—Steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

C—Channel.
T—Channel tapered front and rear
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center
Tf—Tapered front.
A—Straight section sidemembers, lined with oak inserts.
Z—Reinforced (X) member frame, box type sections.

REAR AXLE

Final Drive and Type

B—Bevel.
CD—Chain Drive
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
¾—Three Quarters Floating.
½—Semi-Floating
T—Torque Tube

GEAR RATIOS

(**) Only one ratio.

Drive and Torque

H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods
T—Torque Arm.

GOVERNOR STANDARD

Y—Yes.
N—No.

(Turn to Page 90, Please)

(Continued from Page 89)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number	Main Bearings: Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	BRAKES: Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Available (c.o.e.)...200	.....	.....	.....	15000	5500•	7.00/20D	8.25/20	Wau BM	6–3 5/16x4 1/4	263	5.9	178	78–2800	7–2 5/16x10 1/4		N	WG T9	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV	314	534a	TX	.....	.....	10x3x 1/4	T
2	(c.o.e.)...225	.....	.....	.....	16500	6200•	7.50/20D	8.25/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 5/16x10 1/4		N	WG T97	4	Tim E100DPH	HF	H	** –6.20	Tim 32502H	L4IHV	314	534a	TX	.....	.....	10x3x 1/4	T
3	(c.o.e.)...250	.....	.....	.....	20000	6400•	8.25/20D	9.00/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 5/16x10 1/4		N	Fu 5A330	5	Tim H100DPH	HF	H	** ** –6.80	Tim 32502H	L4IHV	344	584a	TX	.....	.....	10x3x 1/4	T
4	(c.o.e.)...400	.....	.....	.....	22000	6800•	9.00/20D	10.00/20	Wau BZ	6–4x4 1/4	320	5.9	235	105–3200	7–2 5/16x10 1/4		N	Fu 5A330	5	Tim L100DPH	HF	R	** ** –6.83	Tim 35000H	L4IHV	370	642a	TX	.....	.....	12x3x 1/4	T
5	(c.o.e.)...500	.....	.....	.....	23000	7500•	9.00/20D	10.00/20	Wau MZA	6–4 1/4x4 1/4	404	5.6	285	130–3000	7–2 5/16x12 1/2		Y	Fu 5F430	5	Tim L100DPH	HF	R	** ** –6.83	Tim 35000H	L4IHV	370	642a	TX	.....	.....	12x3x 1/4	T
6	(c.o.e.)...550	.....	.....	.....	28000	8100•	10.00/20D	11.00/20	Wau MZA	6–4 1/4x4 1/4	404	5.6	285	130–3000	7–2 5/16x12 1/2		Y	Fu 5F430	5	Tim Q100DPH	HF	R	** ** –7.80	Tim 26452H	L4IHV	458	846a	TX	.....	.....	12x3x 1/4	T
7	(c.o.e.)...550 X	.....	.....	.....	32000	9600•	10.00/20D	11.00/24	Wau MZA	6–4 1/4x4 1/4	404	5.6	285	130–3000	7–2 5/16x12 1/2		Y	Fu 5F430	5	Tim S200DPH	2F	R	** ** –7.84	Tim 26452H	L4IHV	576	1054a	FD	.....	.....	14x3x ☆	T
8	(c.o.e.)...600	.....	.....	.....	28000	10000•	10.00/20D	11.00/24	Wau 140 GK	6–4 1/2x5 1/2	525	6.4	425	172–2600	7–3 1/4x13 1/4		Y	Fu 5A650	5	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950a	FD	.....	.....	14x3x ☆	T
9	(c.o.e.)...601	.....	.....	.....	28000	10900•	10.00/20D	11.00/24	Wau 145 GK	6–5 1/4x6	779	6.2	595	240–2400	7–3 1/4x17 3/4		Y	Spi 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950a	FD	.....	.....	14x3x ☆	T
10	(D) (c.o.e.)...602	.....	.....	.....	28000	11200•	10.00/20D	11.00/24	Cum HB600	6–4 1/2x6	672	17.500		150–1800	7–4 1/2x16 1/4		Y	Spi 7851	4	Tim R100P	HF	R	** –7.40	Tim 26452TW	L4IA	566	950a	FD	.....	.....	14x3x ☆	T
11	Biederman...N8H	.....	130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4 1/2	339	6.9	272	131–3200	7–2 1/2x10 ‡‡		N	Fu 5A330	5	TimH700DPH	SF	H	** –7.2	Tim 35000HX	LH4IH	514	744	G	T	60	9x3x 1/4	C
12	.....N8D	.....	130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6–4x4 1/2	339	6.9	272	131–3200	7–2 1/2x10 ‡‡		N	Fu 5A330	5	TimH700DPH	2D	H	6.13–8.15	Tim 35000HX	LH4IH	514	744	G	T	60	9x3x 1/4	C
13	.....N8R	.....	142	171	21000	7420	8.25/20D	10.00/20	Her JXLD	6–4x4 1/2	339	6.9	272	131–3200	7–2 1/2x10 ‡‡		N	Spi 3541UP	5	TimH110DPH	HFd	H	** –6.4	Tim 35141PX	T4A	.....	.....	G	T	.....	9x3x 1/4	C
14	.....HL	.....	94	197	30000	12200	10.00/24D	12.00/24	Wau 140 GK	6–4 1/2x5 1/2	525	6.4	425	172–2600	7–3 1/4x13 ‡‡		Y	Spi 6252A	5	Tim R200	HFd	H	6.41–8.37	Tim 36000TW	T4A	.....	.....	G	T	81	10x3x ☆	C
	Brown Equip. Co.																														
15	.....R6572T	.....	144	166	33000	.....	11.00-22	12.00/24	Con R6572	6–4 3/4x5 3/4	572	5.9	440	172–2600	7–3 1/4x14 1/2		Y	Spi 6252B	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9 1/4x3 1/2x1 1/4	Tf
16	.....140GKT	.....	144	166	33000	.....	11.00-22	12.00/24	Wau 140GK	6–4 1/2x5 1/2	525	6.4	425	168–2400	7–2 3/4x13 ‡‡		Y	Spi 6252B	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9 1/4x3 1/2x1 1/4	Tf
17	(D) HB600T	.....	144	166	33000	.....	11.00-22	12.00/24	Cum HB600	6–4 1/2x6	672	17.500		150–1800	7–4 1/2x16 1/2		Y	Fu 5A650	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9 1/4x3 1/2x1 1/4	Tf
18	(D) HRB600T	.....	144	166	33000	.....	11.00-22	12.00/24	Cum HRB600	6–5 1/4x6	743	15.530		165–1800			Y	Fu 5A920	5	Tim R100	Hy	H	** –5.28	Tim FE900	Ws4IA	.....	.....	a	2M	67	9 1/4x3 1/2x1 1/4	Tf
19	(D) NHB600T	.....	144	166	33000	.....	11.00-22	12.00/24	Cum NHB600	6–5 1/4x6	743	15.575		200–2100			Y	Fu 5A920	5	Tim S200	2F	H	** –6.42	Tim FE900	Ws4IA	.....	.....	a	2M	67	9 1/4x3 1/2x1 1/4	Tf
20	Chevrolet.....GP	905	116	....	4600	▼2560	6.00/168	158	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦		N	Own		Own	Hy‡	T	** –4.11	Own	O4IH	150	242	Co	2I	39	5 1/2x2 1/4x 1/4	C
21	.....GR	1000	125	....	♦5800	▼2920	158	7.00/17S	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦		N	Own		Own	HyF	H	†† –4.57	Own	O4IH	176	272	Co	2I	48 1/4	5 1/2 x2 1/4 x ☆	C
22	†Fwd. Control..GT	1015	125	....	♦7000	▼2675	158	7.00/17S	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.6	172	90–3300	4– ♦ ♦		N	Own		Own	HyF	H	** –5.14	Own	O4IH	202	302	Co	2I	60	5 1/2 x2 1/4 x ☆	C
23	.....G8	1070	137	....	8800	▼3195	7.00/17S	7.00/18	O-Thrift Mas.	6–3 1/4x3 3/4	216	6.6	174	90–3300	4– ♦ ♦		N	Own		Own	HyF	H	** –5.14	Own	O4IH	248	371	Co	2I	60	7x2 3/4 x ☆	C
24	†Fwd. Control..GU	1105	137	....	10000	▼2855	7.00/17S	7.00/18	O-Thrift Mas.	6–3 1/2x3 3/4	216	6.6	172	90–3300	4– ♦ ♦		N	Own		Own	HyF	H	** –5.14	Own	O4IH	248	371	Co	2I		7x2 3/4 x ☆	C
25	.....8J	1130	137	....	12500	▼3560	7.00/20S	7.50/20	O-Thrift Mas. ::	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦		N	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60	7x2 3/4 x ☆	C
26	.....8K	1165	161	....	12500	▼3670	7.00/20S	7.50/20	O-Thrift Mas. ::	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦		N	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84	8 1/4x2 7/8x1 1/4	C
27	(School bus)..8L	1310	161	....	12000	▼4120	6.50/20D	7.00/20	O-Thrift Mas. ::	6–3 1/2x3 3/4	216	6.6	174	90–3300	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I††		8 1/4x2 7/8x1 1/4	C
28	.....8VS	1450	137	....	15000	▼4120	7.50/20D	9.00/20•¶	O-Load Mas.	6–3 7/8x3 1/4	235	6.7	192	93–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60	8 1/4x2 7/8x1 1/4	C
29	.....8WS	1485	161	....	15000	▼4270	7.50/20D	9.00/20•¶	O-Load Mas.	6–3 7/8x3 1/4	235	6.7	192	93–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84	8 1/4x2 7/8x1 1/4	C
30	(c.o.e.).....8PS	•1805	110	....	15000	••▼4665	7.50/20D	9.00/20•¶	O-Load Mas.	6–3 7/8x3 1/4	235	6.7	189	90–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60 1/2	8 1/4x2 7/8x1 1/4	C
31	(c.o.e.).....8RS	•1840	134	....	15000	••▼4760	7.50/20D	9.00/20•¶	O-Load Mas.	6–3 7/8x3 1/4	235	6.7	189	90–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84 1/2	8 1/4x2 7/8x1 1/4	C
32	(c.o.e.).....8SS	•1875	158	....	15000	••▼4830	7.50/20D	9.00/20•¶	O-Load Mas.	6–3 7/8x3 1/4	235	6.7	189	90–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	108 1/2	8 1/4x2 7/8x1 1/4	C
33	(c.o.e.).....8P	•1805	110	....	16000	••▼4665	7.50/20D	9.00/20¶	O-Load Mas.	6–3 7/8x3 1/4	235	6.7	189	90–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60 1/2	8 1/4x2 7/8x1 1/4	C
34	(c.o.e.).....8R	•1840	134	....	16000	••▼4760	7.50/20D	9.00/20¶	O-Load Mas.	6–3 7/8x3 1/4	235	6.7	189	90–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84 1/2	8 1/4x2 7/8x1 1/4	C
35	(c.o.e.).....8S	•1875	158	....	16000	••▼4830	7.50/20D	9.00/20¶	O-Load Mas.	6–3 7/8x3 1/4	235	6.7	189	90–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	108 1/2	8 1/4x2 7/8x1 1/4	C
36	.....8V	1450	137	....	16000	▼4120	7.50/20D	9.00/20¶	O-Load Mas.	6–3 7/8x3 1/4	235	6.7	192	93–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	60	8 1/4x2 7/8x1 1/4	C
37	.....8W	1485	161	....	16000	▼4270	7.50/20D	9.00/20¶	O-Load Mas.	6–3 7/8x3 1/4	235	6.7	192	93–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I	84	8 1/4x2 7/8x1 1/4	C
38	(School bus)..8X	1530	199	....	15000	▼4615	7.50/20D	8.25/20	O-Load Mas.	6–3 7/8x3 1/2	235	6.7	192	93–3100	4– ♦ ♦		Y	Own		4 Own	HyF	H	–6.17	Own	O4IH	330	478	Co	2I††		8 1/4 x2 1/4 x ☆	C
39	Corbitt■.....18BG	.....	181	....	18000	.....	9.00/20	10.00/20	Con M6330	6–4x4 1/2	330	6.1	246	104–2800	7–2 5/16x12		Y	Cla 205V	5	TimH100DPH	.....	H	**–5.29	Tim 32502H	B4IHV	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
40	.....22BG	.....	190	....	22000	.....	10.00/20	10.00/22	Con B6371	6–4 1/4x4 1/4	371	6.0	280	100–2600	7–2 5/16x13 1/2		Y	Fu 5A43	5	Tim L100DPH	.....	H	**–5.29	Tim 35000H	B4IHV	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
41	.....25BG	.....	200	....	25000	.....	10.00/22	11.00/22	Con B6427	6–4 ☆ x4 1/4	427	5.9	325	127–2600	7–2 5/16x13 1/2		Y	Fu 5A43	5	Tim Q100P	.....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8 1/4x3 1/4x ☆	T
42	(T) 18TG	.....	137	....	18000	.....	9.00/20	10.00/20	Con M6330	6–4x4 3/4	330	6.1	246	104–2800	7–2 5/8x12		Y	Cla 205V	5	Tim H100P‡‡	.....	H	**–5.29	Tim 32505TW	Ws4IA	.....	.....	a	TX	.....	7 1/4x3 1/4x ☆	T
43	(T) H18TG	.....	137	....	20000	.....	10.00/20		Con M6330	6–4x4 3/4	330	6.1	246	104–2800	7–2 5/8x12		Y	Cla 205V	5	Tim L100P‡‡	.....	H	**–5.29	Tim 32505TW	Ws4IA	.....	.....	a	TX	.....	7 1/4x3 1/4x ☆	T
44	(T) 22TG	.....	144	....	22000	.....	10.00/20	10.00/22	Con B6427	6–4 ☆ x4 1/4	427	5.9	325	127–2600	7–2 5/16x13 1/2		Y	Fu 5A43	5	Tim L100P‡‡	.....	H	**–5.29	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
45	(T) H22TG	.....	144	....	24000	.....	10.00/22		Con B6427	6–4 ☆ x4 1/4	427	5.9	325	127–2600	7–2 5/16x13 1/2		Y	Fu 5A43	5	Tim Q100P‡‡	.....	H	**–5.29	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
46	(T) 25TG	.....	148	....	25000	.....	10.00/22	11.00/22	Con R6513	6–4 1/2x5 3/4	513	5.9	400	170–2600	7–3 1/4 x—		Y	Spi 6253	5	Tim Q100P‡‡	.....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8 1/4x3 1/4x ☆	T
47	(T) H25TG	.....	148	....	25000	.....	10.00/22		Con R6513	6–4 1/2x5 3/4	513	5.9	400	170–2600	7–3 1/4 x—		Y	Spi 6253	5	Tim R100P‡‡	.....	H	**–6.17	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8 1/4x3 1/4x ☆	T
48	(T) 28TG	.....	144	....	28000	.....	10.00/22	11.00/24	Con R6602	6–4 1/2x5 1/2	602	5.9	484	199–2600	7–3 1/4 x—		Y	Fu 5A650	5	Tim S200P‡‡	.....	H	**–6.42	Tim 26450TW	Ws4IA	.....	.....	a	2D	•	8 1/4x3 1/4x ☆	T
49	(D) (T) 22TD	.....	144	....	22000	.....	10.00/20	10.00/22	Her DWXD	6–4 1/4x4 1/4	404	15	320	135–2600			Y	Fu 5A430	5	Tim L300P	.....	H	6.32–8.20	Tim 35000TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
50	(D) (T) H22TD	.....	144	....	22000	.....	10.00/22		Her DWXD	6–4 1/4x4 1/4	404	15	320	135–2600			Y	Fu 5A430	5	Tim Q300P	.....	H	6.53–8.53	Tim 35100TW	Ws4IA	.....	.....	a	TX	.....	8x3 1/4 x 1/4	T
51	(D) (T) 25TD	.....	148	....	25000	.....	11.00/20	11.00/22	Her DRXC	6–4 1/2x5 1/4	529	14	400	148–2200	7–3 1/2x13 3/4		Y	Spi 6253	5	Tim Q300P	.....	H	6.53–8.53	Tim 35000TW	Ws4IA	.....	.....	a	2	.....	8 1/4x3 1/4x ☆	T
52	(D) (T) H25TD	.....	148	....	25000	.....	10.00/22		Her DRXC	6–4 1/2x5 1/4	529	14	400	148–2200	7–3 1/2x13 3/4		Y	Spi 6253	5	Tim R300P	.....	H	6.53–8.53	Tim 35000TW	Ws4IA	.....	.....	a	2	.....	8 1/4x3 1/4x ☆	T
53	(D) (T) 27TD	.....	152	....	27000	.....	10.00/22	11.00/24	Cum HB600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2		Y	Fu 5A920	5	Tim R300P	.....	H	4.92–6.42	Tim 26450W	Ws4IA	.....	.....	a	2	.....	8 1/4x3 1/4x ☆	T
54	(D) (T) H27TD	.....	152	....	27000	.....	10.00/22		Cum HB600	6–4 1/2x6	672	17	500	150–1800	7–4 1/2x16 1/2		Y	Fu 5A920	5	Tim S200P‡‡	.....	H	**–6.42	Tim 26450W	Ws4IA	.....	.....	a	2	.....	8 1/4x3 1/4x ☆	T
55	(D) (T) 28TD	.....	155	....	28000	.....	10.00/22	11.00/24	Cum NHB600	6–5 1/4x6	743	15	575	200–2100	7–4 1/2x16 1/2		Y	Fu 5A920	5	Tim S200P‡‡	.....	H	6.42	Tim 26450W	Ws4IA	.....	.....	a	2D	.....	8 1/4x3 1/4x ☆	T
56	(T) 26TG	.....	148	....	26000	.....	10.00/22	11.00/22	Con R660	6–4 1/4x5 1/4	602	5.9	484	199–2600	7–3 1/4 x—		Y	Fu 5A65	5	Tim R100P‡‡	.....	H	** –5.29	Tim 35100TW	Ws4IA	.....	.....	a	2	.....	8 1/2x3 1/4x ☆	T
57	Crosley.....B	.....	80	....	2110	1310••	4.50/12	.....	Own	4–2 1/2x2 1/4	44	7.8	33	26–5400	5–‡			WG-A8I-T92	3	Spi		2F	..	** –5.17	Own		Own M	64	72	C	2	.....	.....	C
58	Dodge.....B-1-B	.....	108	108	4850	.....	6.00/168	6.50/168	Own T-142	6–3 1/4x4 1/4	217	6.6	172	95–3600	4–2 1/2x4 .8		N	NP-88670	3	Own T-142	H‡	H	4.1 –4.78	Own T-142	O4IH	175	264	Co	TX	40	☆ x2 ☆ x6 ☆	C
59	.....B-1-C	.....	116	116	5500	.....	TA-15-S	TA-15-S	Own T-144	6–3 1/4x4 1/4	217	6.6	172	95–3600	4–2 1/2x4 .8		N	NP-88670	3	Own T-144	H‡	H	4.1 –4.78	Own T-144	O4IH	184	276	Co	TX	48	☆ x2 ☆ x6 ☆	C
60	.....B-1-D	.....	116	126	7500	.....	6.00/168^	6.00/208	Own T-146	6–3 1/4x4 1/2	230	6.7	184	102–3600	4–2 1/2x4 .8		N	NP-39980	3	Own T-146	HyF	H	3.9 –4.89	Own T-146	O4IH	212	316	Co	TX	48	☆ x2 ☆ x6 1/2 ☆	C
61	.....B-1-FL	.....	128	152	9500	.....	6.00/20S‡	6.50/20	Own T-148	6–3 ☆ x4 1/4	236	6.6	192	109–3600	4–2 1/2x5 .054		N	NP-39760	4	Own T-148	HyF	H	5.6 –6.8	Own T-148	O4IH	336	479	Cc	TX	60	21x2 3/4x7	C
62	.....B-1-F	.....	128	192	14500	.....	6.00/20S‡	8.25/20	Own T-148	6–3 ☆ x4 1/4	236	6.6	192	109–3600	4–2 1/2x5 .054		N	NP-39760	4	Own T-148	HyF	H	5.6 –6.8	Own T-148	O4IH	336	479	Cc	TX	60	21x2 3/4x7	C
63	.....B-1-FA	.....	128	192	14500	.....	6.50/20D	8.25/20	Own T-148	6–3 ☆ x4 1/4	236	6.6	192	109–3600	4–2 1/2x5 .054		N	NP-39760	4	Eat A5-1350	SFd	H	5.83–8.11	Own T-148	O4IH	336	479	Cc	TX	60	21x2 3/4x7	C
64	.....B-1-H	.....	128	192	15500	.....	7.50/20-10	8.25/20	Own TX-148	6–3 ☆ x4 1/4	236	6.6	192	109–3600	4–2 1/2x5 .054		N	NP-39760	4	Own TX-148	HyF	H	5.6 –6.8	Own TX-148	O4IHV	336	479	Cc	TX	60	21x2 3/4x7	C
65	.....B-1-HA	.....	128	192	15500	.....	7.50/20.10	8.25/20	Own TX-148	6–3 ☆ x4 1/4	236	6.6	192	109–3600	4–2 1/2x5 .054		N	NP-39760	4	Eat A5-1350	SFd	H	5.8 –8.11	Own TX-148	O4IHV	336	479	Cc	TX	60	21x2 3/4x7	C
66	(c.o.e.) .B-1-FM	.....	107	161	14750	.....	6.00/20S‡	8.25/20	Own T-152	6–3 ☆ x4 1/4	236	6.6	192	109–3600	4–2 1/2x5 .054		N	NP-88070	4	Own T-152	HyF	H	5.6 –6.8	Own T-152	O4IH	336	479	Cc	TX	60	21x2 3/4x7	C
67	(c.o.e.) B-1-FMA	.....	107	161	14750	.....	6.50/20D	7.50/20	Own T-152	6–3 ☆ x4 1/4	236	6.6	192	109–3600	4–2 1/2x5 .054		N	NP-88070	4	Eat A5-1350	SFd	H	5.8 –8.11	Own T-152	O4IH	336	479	Cc	TX	60	21x2 3/4x7	C

¶—8.25/20 front tires are required when 9.00/20 dual rears are used.

••—Pick-up truck; panel delivery 1343.

‡‡—Two speed axles available.

::—Own Loadmaster engine available on models SJ-28S, at extra cost.

‡—Rear 5.40/208.

■—Chevrolet own rear axle (5.43:1) available on Models SJ-SK-SL. Chevrolet own 2-speed rear axle (6.13-8.10:1) available at extra cost on Models 8VS-8WS-8P-8PS-8R-8RS-8S-8SS-8V-8W-8X.

†—Front only: Rear 5.50/208.

♦—7.50/17 tire is optional for Rear or Front and Rear, with no increase in G.V.W.

▲—7.50/20 can be used on the front with no decrease in 15000 G. V. W. when 9.25/20 are used on dual rear wheels.

■—Sleeper cab models available.

†—Forward control Chassis for Door-to-Door delivery bodies. These chassis do not have cowl.

††—Also available in 5.14 ratio.

‡‡—Front only: Rear 7.00/168.

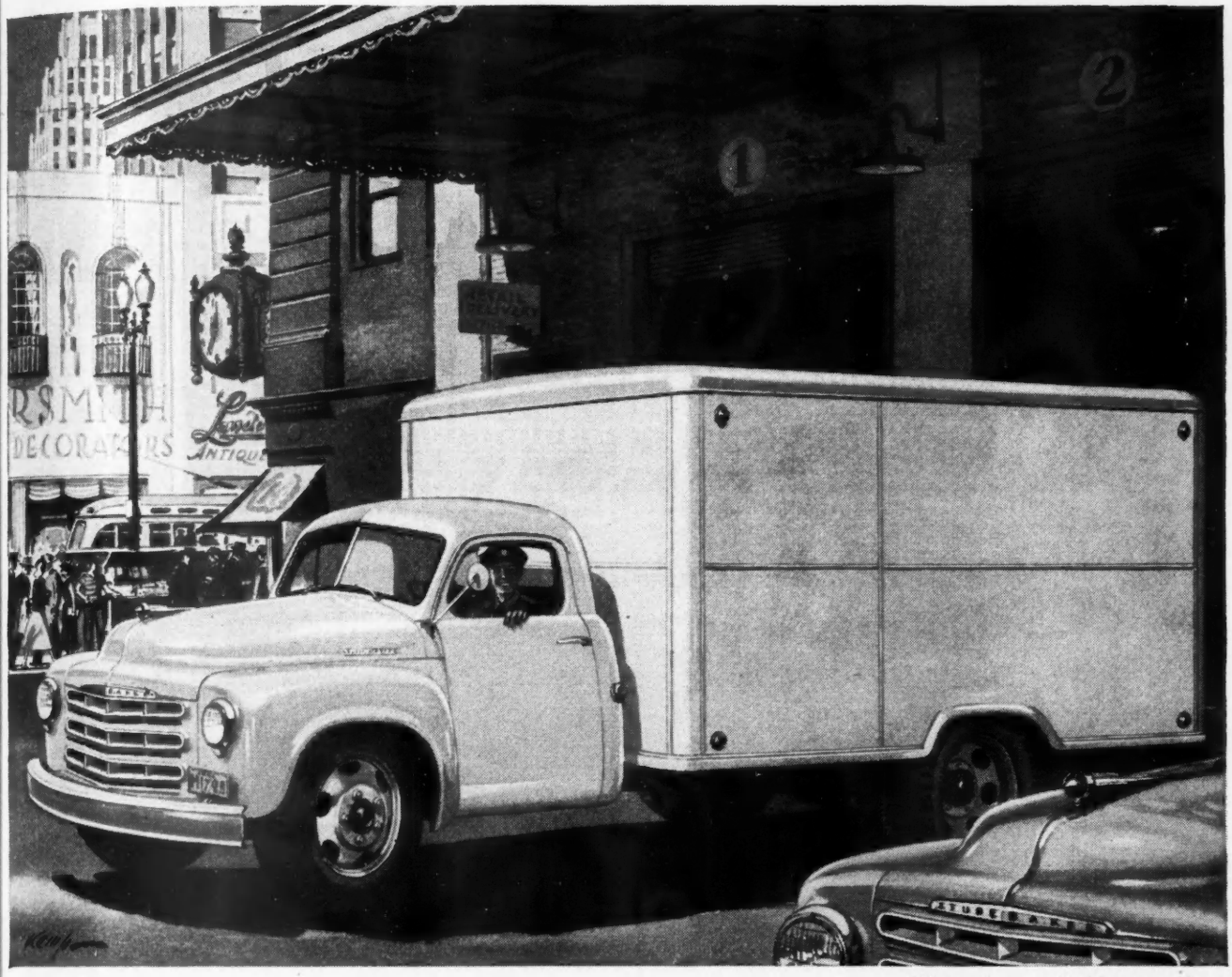
•—1 Front 7.376x21.312; 3 Center 1.375x.870; 1 Rear 1.625x1.062. 4-speed transmission available.

**—Propeller shaft type available at extra cost.

††—Diameter: (Average) Front, 2.6858; Front Center, 2.7168; Rear Center, 2.7478; Rear, 2.7788; Total length, 5 5/8.

•—Includes cab.

•—Includes spare tire, full fuel tank and cooling system.



1½-ton shown with 15 foot van body

Amazing new "Power Plus" Studebaker trucks revolutionize medium-duty hauling!

New pulling power! New staying power! New horsepower! New high torque!

Sizes and wheelbases for hundreds of needs! The new Studebaker trucks come in ½-ton, ¾-ton, 1-ton, 1½-ton and 2-ton capacities. Roomy, weather-tight cabs with enormous visibility. Cab steps are enclosed inside doors. New "lift-the-hood" accessibility is a big help—engine, ignition, instrument panel wiring are within easy arm's reach.

STUDEBAKER has added new luster to its reputation for America's most progressive truck designing.

Studebaker offers economy-minded truck users a sensationally improved line of medium-duty trucks—the new 16A and 17A series.

These advanced 1½-ton and 2-ton Studebakers are new marvels of pulling power and staying power—do better work for less money.

A "Power Plus" Studebaker truck engine is one distinction of these new medium-duty Studebakers. It develops 100 horsepower at 3400 r.p.m. It delivers 200 lbs. ft. torque.

There's new ruggedness with the new power in these new Studebaker pacemakers—an extra K-member up front for extra strength—a "plus" of frame length for maximum load space—tremendously sturdy rear axles—exceptionally strong springs front and rear.

The Studebaker truck cab is extra roomy and extra cool—with foot-operated floor ventilation—Adjusto-Air seat cushion. Visibility is enormous. Cab steps are weather-protected, enclosed inside the doors.

Before you buy any medium-duty truck, check into the new "Power Plus" Studebakers. See what stand-outs they are in solid value!

STUDEBAKER TRUCKS

NOTED FOR LOW COST OPERATION

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(Continued from Page 90)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Dual unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Speeds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES SERVICE Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
	Dodge Cont'd																														
1	(c.o.e.) B-1-HM		107	161	15750		7.50/20-10	8.25/20	Own TX-152	6–3 7/16 x4 1/2	236	6.6	192	109-3600	4-2 1/2 x5.054	Y	NP-88070	4	Own T-152	HyF	H	5.6 –6.8	Own TX-152	O4IHV	336	479	Ce	TX	60	.21x2 3/4 x7	C
2	(c.o.e.) B-1-HMA		107	161	15750		7.50/20-10	8.25/20	Own TX-152	6–3 7/16 x4 1/2	236	6.6	192	109-3600	4-2 1/2 x5.054	Y	NP-88070	4	Eat A5-1350	SFd	H	5.8 –8.11	Own TX-152	O4IHV	336	479	Ce	TX	60	.21x2 3/4 x7	C
3	B-1-HH		128	192	15500		7.50/20-10	8.25/20	Own TX-148	6–3 7/16 x4 1/2	236	6.6	192	109-3600	4-2 1/2 x5.054	Y	NP-39760	4	Own TX-148	HyF	H	5.6 –6.8	Own TX-148	O4IHV	336	479	Ce	TX	60	.21x2 3/4 x7	C
4	B-1-HHA		128	192	15500		7.50/20-10	8.25/20	Own TX-148	6–3 7/16 x4 1/2	236	6.6	192	109-3600	4-2 1/2 x5.054	Y	NP-39760	4	Eat A5-1350	SFd	H	5.8 –8.11	Own TX-148	O4IHV	336	479	Ce	TX	60	.21x2 3/4 x7	C
5	(c.o.e.) B-1-HHM		107	161	15750		7.50/20-10	8.25/20	Own TX-152	6–3 7/16 x4 1/2	236	6.6	192	109-3600	4-2 1/2 x5.054	Y	NP-88070	4	Own TX-152	HyF	H	5.6 –6.8	Own TX-152	O4IHV	336	479	Ce	TX	60	.21x2 3/4 x7	C
6	" B-1-HHMA		107	161	15750		7.50/20-10	8.25/20	Own TX-152	6–3 7/16 x4 1/2	236	6.6	192	109-3600	4-2 1/2 x5.054	Y	NP-88070	4	Eat A5-1350	SFd	H	5.8 –8.11	Own TX-152	O4IHV	336	479	Ce	TX	60	.21x2 3/4 x7	C
7	B-1-JL		128	212	16500		6.00/20D	8.25/20	Own T-150	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88400	5	Own T-150	HyF	H	6.2 –7.16	Own T-150	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
8	B-1-JAL		128	212	16500		6.00/20D	8.25/20	Own T-150	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88400	5	Eat A5-1350	SFd	H	5.8 –8.11	Own T-150	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
9	B-1-KAL		128	212	17000		8.25/20-10	9.00/20	Own TX-150	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88400	5	Eat 16500	SFd	H	6.14–8.54	Own TX-150	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
10	(c.o.e.) B-1-JML		107	161	16750		6.00/20D	8.25/20	Own T-154	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88410	5	Own T-154	HyF	H	6.2 –7.16	Own T-154	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
11	" B-1-JMAL		107	161	16750		6.20/20D	8.25/20	Own T-154	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88410	5	Eat A5-1350	SFd	H	5.8 –8.11	Own T-154	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
12	" B-1-KMAL		107	161	17250		8.25/20-10	9.00/20	Own TX-154	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88410	5	Eat 16500	SFd	H	6.14–8.54	Own TX-154	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
13	B-1-J		128	212	16500		6.50/20D	8.25/20	Own T-150	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88400	5	Own T-150	HyF	H	6.2 –7.16	Own T-150	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
14	B-1-JA		128	212	16500		6.50/20D	8.25/20	Own T-150	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88400	5	Eat A5-1350	SFd	H	5.8 –8.11	Own T-150	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
15	B-1-KA		128	212	17000		8.25/20▲	9.00/20	Own TX-150	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88400	5	Eat16500	SFd	H	6.14–8.54	Own TX-150	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
16	(c.o.e.) B-1-JM		107	161	16750		6.50/20D	8.25/20	Own T-154	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88410	5	Own T-154	HyF	H	6.2 –7.16	Own T-154	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
17	(c.o.e.) B-1-JMA		107	161	16750		6.50/20D	8.25/20	Own T-154	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88410	5	Eat A5-1350	SFd	H	5.8 –8.11	Own T-154	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
18	(c.o.e.) B-1-KMA		107	161	17250		8.25/20▲	9.00/20	Own TX-154	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88410	5	Eat 16500	SFd	H	6.14–8.54	Own TX-154	O4IHV	396	553	e	TX	60	11/16 x2 3/4 x8 1/4	C
19	B-1-R		130	229	18500		7.50/20D	9.00/20	Own T-156	6–3 3/4 x4 1/4	281	6.4	225	115-3200	7-3x11.2	Y	NP-88220	5	TimH100DPH	HyF	H	6.8 –7.2	Own T-156	O4IHV	396	609	e	TX	60	11/16 x2 3/4 x9 1/4	C
20	B-1-RA		130	229	18500		7.50/20D	9.00/20	Own T-156	6–3 3/4 x4 1/4	281	6.4	225	115-3200	7-3x11.2	Y	NP-88220	5	Tim H300	HFd	H	6.14–8.8	Own T-156	O4IHV	396	609	e	TX	60	11/16 x2 3/4 x9 1/4	C
21	B-1-T		130	190	21000		7.50/20^	10.00/20	Own T-158	6–3 3/4 x5	331	6.5	270	128-3000	7-3x11.2	Y	NP-88450	5	Tim L100	HyF	H	6.8 –7.4	Tim 32516A1	O4IHV	424	666	e	TX	60	1/4 x3x10	C
22	B-1-TA		130	190	21000		7.50/20^	10.00/20	Own T-158	6–3 3/4 x5	331	6.5	270	128-3000	7-3x11.2	Y	NP-88450	5	Tim L300	HFd	H	6.3 –9.18	Tim 32516A1	O4IHV	424	666	e	TX	60	1/4 x3x10	C
23	B-1-V		130	190	23000		9.00/20D†	11.00/20	Own TX-158	6–3 3/4 x5	331	6.5	270	128-3000	7-3x11.2	Y	NP-88450	5	Tim Q100	HyF	H	7.8-8.5DR	Tim 35020nx9	O4IHV	485	770	e	TX	60	1/4 x3x10	C
24	B-1-VA		130	190	23000		9.00/20D†	11.00/20	Own TX-158	6–3 3/4 x5	331	6.5	270	128-3000	7-3x11.2	Y	NP-88450	5	Tim Q300	HFd	H	6.5 –9.5	Tim 35020nx9	O4IHV	485	770	e	TX	60	1/4 x3x10	C
25	Rte. VanB-1-DU		102	117	7900		7.00/16	8.25/16S	Own T-164	6–3 3/4 x4 1/2	230	6.7	184	102-3600	4-2 1/2 x4.8	N	NP-88490	3	Own T-164	HyF	H	4.89–....	Own T-164	O4IH	212	316	e	TX	No	1/4 x2 1/4 x6 1/4	C
26	" B-1-EU		102	142	10100		7.50/16††	9.00/16S	Own T-165	6–3 3/4 x4 1/2	230	6.7	184	102-3600	4-2 1/2 x4.8	N	NP-88500	4	Own T-165	HyF	H	5.83–....	Own T-165	O4IH	240	355	e	TX	No	11/16 x2 1/4 x6 1/4	C
	School Buses																														
27	B-1-FS		152	192	15000		6.50/20D	7.00/20	Own TS-148	6–3 7/16 x4 1/2	230	6.6	192	109-3600	4-2 1/2 x5.054	N	NP-39760	4	Own T-148	HyF	H	5.6 –6.8	Own T-148	O4IH	336	479	Ce	TX	.....	.21x2 3/4 x7	C
28	B-1-JS		212	212	17000		7.50/20D	8.25/20	Own TS-150	6–3 7/16 x4 1/2	250	6.6	204	114-3600	4-2 1/2 x5.054	Y	NP-88400	5	Own T-150	HyF	H	6.2 –7.16	Own T-150	O4IHV	396	553	e	TX	.....	11/16 x2 3/4 x8 1/4	C
29	B-1-RS		229	229	19000		8.25/20D	9.00/20	Own TS-156	6–3 3/4 x4 1/4	281	6.4	225	115-3200	7-3x11.2	Y	NP-88220	5	TimH100DPH	HyF	H	6.8 –7.2	Own T-156	O4IHV	396	609	e	TX	.....	11/16 x2 3/4 x9 1/4	C
30	**Duplex** T		136	220	18000	6600	8.25/20D	9.00/20	Her JXD	6–4x4 1/4	320	6.2	240	113-3000	7-2 1/2 x10 1/4	Y	Fu 5B330	5	Tim H100	B	H	** –7.20	Tim 32502	L4IHV	420	654	A	TX	57 1/4	9 1/16 x3 1/2 x 1/4	C
31	TH-404		136	220	18000	6900	8.25/20D	9.00/20	Her WXLC3	6–4 1/4 x4 3/4	404	5.8	312	139-2600	7-2 9/16 x13 3/4	Y	Fu 5A430	5	Tim H-300	DF	H	6.13–8.15	Tim 32502	L4IHV	420	654	A	TX	49 1/4	9 1/16 x3 1/2 x 1/4	C
32	R		136	220	25000	8820	9.00/20D	10.00/20	Her WXLC-3	6–4 1/4 x4 3/4	404	5.8	312	139-2600	7-2 9/16 x13 1/4	Y	Fu 5A43	5	Tim Q300	DF	R	6.53–8.53	Tim 35100	L4IHV	730	1016	A	TX	49 1/4	9 1/16 x3 1/2 x 1/4	C
33	SH-501		172	208	27000	9500	10.00/20	11.00/20	Her RXB	6–4 1/2 x5 1/4	501	5.4	360	137-2400	7-3x13 1/4	Y	Fu 5A620		Tim Q200	2F	R	** –7.77	Tim 35100	Ws4IA	730	1016	A	TX	61 1/4	9 1/16 x3 1/2 x 1/4	C
34	JHA		148	220	28000	9800	10.00/20D	11.00/20	Her RXB	6–4 1/2 x5 1/4	501	5.4	360	137-2400	7-3x13 1/4	Y	Fu 5A620	5	Tim S200	2F	R	** –9.83	Tim 26450	Ws4IA	912	1311	A	TX	61 1/4	10 1/16 x3 1/2 x 1/4	C
35	JH-558		148	220	28000	9800	10.00/20D	11.00/20	Her RXLD	6–4 1/4 x5 1/4	558	6.3	430	154-2400	7-3 1/2 x13 1/4	Y	Fu-5A650	5	Tim S-300	DF	R	6.53–8.53	Tim 26450	Ws4IA	912	1311	A	TX	60 1/4	10 1/16 x3 1/2 x 1/4	C
36	KHA		148	220	32000	10500	11.00/20D	11.00/20	Her RXC	6–4 1/2 x5 1/4	529	5.4	395	132-2300	7-3x13 1/4	Y	Fu 5A620	5	Tim U-200	2F	R	** –9.83	Tim 26450	Ws4IA	912	1311	A	TX	60 1/4	10 1/16 x3 1/2 x 1/4	C
37	L		148	220	37000	11300	11.00/20D	11.00/20	Her RXLD	6–4 1/4 x5 1/4	558	5.4	430	154-2400	7-3 1/2 x13 1/4	Y	Fu 5C650	5	Tim U-200	2F	R	** –9.83	Tim 26450	Ws4IA	912	1311	A	TX	60 1/4	10 1/16 x3 1/2 x 1/4	C
38	**Federal** 15M		135	194	14500	4080	6.50/20D	7.50/20	Here JXEF	6–3 1/2 x4 1/4	245	...	184	90-3100	7-2 1/2 x10 1/4	N	WGT9A	4	T53547DPH	BF	H	5.66	Tim 30000H X	L41HV	310	482	a	TX	56	8 1/16 x2 1/16 x 1/4	T
39	16M		139	250	15500	4460	7.50/20D	7.50/20	Her JXEF	6–3 1/2 x4 1/4	245	...	184	90-3100	7-2 1/2 x10 1/4	N	WG T9A	4	T 53547DPH	BF	H	** –5.66	Tim 30000HX	L41HV	310	482	a	TX	60	8 1/16 x2 1/16 x 1/4	T
40	16M2		139	250	15500	4590	7.50/20D	8.25/20D	Her JXEF	6–3 1/2 x4 1/4	245	...	184	90-3100	7-2 1/2 x10 1/4	N	WG T9A	4	Tim E300DPH	dF	H	6.13–8.10	Tim 30000HX	L41HV	310	482	a	TX	60	8 1/16 x2 1/16 x 1/4	T
41	18M		139	250	17000	4700	8.25/20D	8.25/20	Her JXBF	6–3 9/16 x4 1/4	263	...	190	96-3000	7-2 1/2 x10 1/4	N	WG T9A	4	Tim E100DPH	SF	H	** –6.20	Tim 30003H	LT4IHV	314	532	a	TX	60	8 1/16 x2 1/16 x 1/4	T
42	18M2		139	250	17000	4830	8.25/20D	8.25/20	Her JXBF	6–3 9/16 x4 1/4	263	...	190	96-3000	7-2 1/2 x10 1/4	N	WG T9A	4	Tim E300DPH	dF	H	6.13–8.10	Tim 30003H	LT4IHV	314	532	a	TX	60	8 1/16 x2 1/16 x 1/4	T
43	25M		139	250	19000	4950	8.25/20D	9.00/20	Her JXCF	6–3 3/4 x4 1/4	282	...	212	102-3000	7-2 1/2 x10 1/4	N	Cla 205VO	5	TimH100DPH	SF	H	** –6.80	Tim 3100H	LT4IHV	346	583	a	TX	60	8 1/16 x2 1/16 x 1/4	T
44	25M2		139	250	19000	5100	8.25/20D	9.00/20	Her JXCF	6–3 3/4 x4 1/4	282	...	212	102-3000	7-2 1/2 x10 1/4	N	Cla 205VO	5	TimH300DPH	dF	H	6.13–8.15	Tim 3100H	LT4IHV	346	583	a	TX	60	8 1/16 x2 1/16 x 1/4	T
45	29M		139	250	21500	5500	9.00/20D	10.00/20	Her JXDF	6–4x4 1/4	320	...	250	112-2800	7-2 1/2 x10 1/4	Y	Cla 205V	5	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/16 x2 1/16 x 1/4	T
46	29M2		139	250	21500	5690	9.00/20D	10.00/20	Her JXDF	6–4x4 1/4	320	...	250	112-2800	7-2 1/2 x10 1/4	Y	Cla 205V	10	Tim L300DPH	dF	H	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/16 x2 1/16 x 1/4	T
47	29MA		155	250	21500	5950	9.00/20D	10.00/20	Her JXDF	6–4x4 1/4	320	...	250	112-2800	7-2 1/2 x10 1/4	Y	Cla 205V♦	15	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8 1/16 x2 1/16 x 1/4	T
48	29ML		139	250	21500	5535	9.00/20D	10.00/20	Here JXLDF	6–4x4 1/2	339	...	272	126-2800	7-2 1/2 x10 1/4	Y	Cla 205V	5	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/16 x2 1/16 x 1/4	T
49	29ML2		139	250	21500	5725	9.00/20D	10.00/20	Here JXLDF	6–4x4 1/2	339	...	272	126-2800	7-2 1/2 x10 1/4	Y	Cla 205V	10	Tim L300DPH	dF	H	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60	8 1/16 x2 1/16 x 1/4	T
50	29MLA		155	250	21500	5985	9.00/20D	10.00/20	Here JXLDF	6–4x4 1/2	339	...	272	126-2800	7-2 1/2 x10 1/4	Y	Cla 205V	15	Tim L100DPH	SF	H	** –6.83	Tim 32514H	LT4IHV	466	820	a	TD	76	8 1/16 x2 1/16 x 1/4	T
51	35M		143	203	22500	6925	9.00/20D	10.00/20	Con T6371F	6–4 1/4 x4 1/2	371	...	290	133-2600	7-2 1/2 x13 1/2	Y	Cla 270VO	5	Tim L100DPH	SF	R	**–6.83	Tim 32514H	LT4IHV	466	820	a	TX	60 1/2	10 1/16 x3 1/4 x 1/4	T
52	35M2		143	203	22500	7115	9.00/20D	10.00/20	Con T6371F	6–4 1/4 x4 1/2	371	...	290	133-2600	7-2 1/2 x13 1/2	Y	Cla 270VO	10	Tim L300DPH	dF	R	6.32–8.22	Tim 32514H	LT4IHV	466	820	a	TX	60 1/2	10 1/16 x3 1/4 x 1/4	T
53	45M		143	203	26000	8005	10.00/22D	10.00/24	Con T6427F	6–4 1/4 x4 1/2	427	...	342	155-2600	7-2 1/2 x13 1/2	Y	Cla 270VO	5	Tim Q100P	SF	R	** –6.83	Tim 35011TW	TW4IA	606	933	a	TD	60 1/2	10 1/16 x3 1/4 x 1/4	T
54	45M2		143	203	26000	8380	10.00/22D	10.00/24	Con T6427F	6–4 1/4 x4 1/2	427	...	342	155-2600	7-2 1/2 x13 1/2	Y	Cla 270VO	10	Tim Q300P	dF	R	6.53–8.53	Tim 35011TW	TW4IA	606	933	a	TD	60 1/2	10 1/16 x3 1/4 x 1/4	T
55	55M2		143	203	30000	8635	11.00/22D	11.00/24	Con T6427F	6–4 1/4 x4 1/2	427	...	342	155-2600	7-2 1/2 x13 1/2	Y	Cla 270VO	10	Tim S300P	HyF	R	6.53–8.53	Tim 36021TW	Tw4IA	722	1051	a	TD	60 1/2	10 1/16 x3 1/2 x 1/4	T
56	55MA		155	203	30000	8765	11.00/22D	11.00/24	Con T6427F	6–4 1/4 x4 1/2	427	...	342	155-2600	7-2 1/2 x13 1/2	Y	Cla 270V♦	15	Tim S-200P	2F	R	** –7.08	Tim 36021TW	TW4IA	722	1051	a	TD	72 1/2	10 1/16 x3 1/4 x 1/4	T
57	60MA		155	203	32000	9600	11.00/22D	11.00/24	Con 22RF	6–4 1/2 x5 1/4	501	...	384	148-2400	7-2 3/4 x14 1/2	Y	Fu 5A65‖	15	Tim S200P	2F	R	** –7.08	Tim 36021TW	Tw4IA	722	1051	a	FX	72 1/2	10 1/16 x3 1/4 x 1/4	T
58	60M2		143	203	32000	9370	11.00/22D	11.00/24	Con 22RF	6–4 1/2 x5 1/4	501	...	384	148-2400	7-2 3/4 x14 1/2	Y	Fu 5A650	10	Tim S300P	HyF	R	6.53–8.53	Tim 36021TW	Tw4IA	722	1051	a	TX	60 1/2	10 1/16 x3 1/2 x 1/4	T
59	65M2		141	201	33000	9995	11.00/22D	11.00/24	Con R6602F	6–4 7/16 x5 5/8	602	...	464	200-2600	7-3 1/4 x14 1/2	Y	Fu 5A650	10	Tim S300P	HyF	R	6.53–8.53	Tim 36000TW	Ws4IA	722	1051	a	TX	60 1/2	10 1/16 x3 1/2 x 1/4	T
60	65MA		153	201	33000	10225	11.00/22D	11.00/24	Con R6602F	6–4 7/16 x5 5/8	602	...	464	200-2600	7-3 1/4 x14 1/2	Y	Fu 5A65‖	15	Tim S200P	HyF	R	** –7.08	Tim 36000TW	Ws4IA	722	1051	a	TX	72 1/2	10 1/16 x3 1/4 x 1/4	T
	Ford F-1																														
61	Cowl 9HC-84	930	114	114	4700	2226	6.00/16-4	6.50/16-6S	Own 7HC	6–3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 21C	3	Own 8C	H 1/2	H	3.73–4.27	Own 8RC	O4IH	178	259	Co	M2	40.06	5.92x2 1/2 x15	T
62	Cowl 9RC-84	960	114	114	4700	2266	6.00/16-4	6.50/16-6S	Own 8RC	8–3 1/4 x3 3/4	239	6.8	180	100-3800	3-2.49x5.2	N	Own 21C	3	Own 8C	H 1/2	H	3.73–4.27	Own 8RC	O4IH	178	259	Co	M2	40.06	5.92x2 1/2 x15	T
	F-2																														
63	Cowl 9HD-84	1045	122	122	5700	2616	6.50/16-6	7.00/16-6S	Own 7HD	6–3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 51Y	4	Own 8D	SF	H	** –4.86	Own 8RD	O4IH	167	264	Co	M2	48.06	6x2 1/4 x.19	T
64	Cowl 9RD-84	1075	122	122	5700	2656	6.50/16-6	7.00/16-6S	Own 8RD	8–3 1/4 x3 3/4	239	6.8	180	100-3800	3-2.49x5.2	N	Own 51Y	4	Own 8D	SF	H	** –4.86	Own 8RD	O4IH	167	264	Co	M2	48.06	6x2 1/4 x.19	T
	F-3																														
65	Cowl 9HY-84	1120	122	122	6800	2849	7.00/17-68	7.50/17-8S	Own 7HY	6–3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 51Y	4	Own 8Y	SF	H	** –4.86	Own 8RD	O4IH	188	308	Co	M2	48.06	6x2 1/4 x.19	T
66	Cowl 9RY-84	1150	122	122	6800	2889	7.00/17-68	7.50/17-8S	Own 8RY	8–3 1/4 x3 3/4	239	6.8	180	100-3800	3-2.49x5.2	N	Own 51Y	4	Own 8Y	SF	H	** –4.86	Own 8RD	O4IH	188	308	Co	M2	48.06	6x2 1/4 x.19	T
	F-3 Parcel Dlvy.																														
67	w/s. 9HJ	1375	104	104	7800	3030	7.00/16-6	7.50/17-8S	Own 8HJ	6–3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 8J	3	Own 8J	SF	H	** –4.86	Own 8J	O4IH	215	330	C	TX	82‡	6x2 1/4 x.19	T
68	w/s. 9H2J	1390	122	122	7800	3100	7.00/16-6	7.50/17-8S	Own 8HJ	6–3.3x4.4	226	6.8	180	95-3300	4-2.87x5.2	N	Own 8J	3	Own 8J	SF	H	** –4.86	Own 8J	O4IH	215	330	C	TX	100‡	6x2 1/4 x.19	T
	F-4																														
69	Cowl 9HTL-84	1175	134	134	10000	3457	7.00/20-8S	7.00/18-8	Own 7HT	6–3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	SF	H	5.14–5.83	Own 7RTL	O4IH	302	506	Co	TX	60.06	7x2 1/4 x.21	T
70	Cowl 9RTL-84	1205	134	134	10000	3497	7.00/20-8S	7.00/18-8	Own 8RT	8–3 1/4 x3 3/4	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	SF	H	5.14–5.83	Own 7RTL	O4IH	302	506	Co	TX	60.06	7x2 1/4 x.21	T

(Turn to Page 94, please)

†—Front only: Rear 10.00/20.
†—Front only: Rear 8.25/16.
*—Cowl to Axle.

•—For shorter wheelbases—10x3 1/16 x 1/4.
▲—Auxiliary trans. Spicer 6231S, three forward speeds.

‡—Auxiliary trans. Spicer 703F, three forward speeds.
††—Front only: Rear 8.25/16.
‡—Front only: Rear 9.00/20-10.

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- Heavy, oversize plates.
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THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

(Continued from Page 92)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANS-MISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
	Ford, Continued																													
	F-5																													
1	Cowl....9HT-84	1220	134	134	14000	3646	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	60.06	7x2¾x.21●	LT
2	Cowl....9RT-84	1250	134	134	14000	3686	6.50/20-6	7.50/20-8	Own 8RT	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	60.06	7x2¾x.21●	LT
3	Cowl....9HST-84	1250	158	158	14000	3796	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	84.06	7x2¾x.21●	LT
4	Cowl....9RST-84	1280	158	158	14000	3836	6.50/20-6	7.50/20-8	Own 8RT	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	84.06	7-2¾x.21●	LT
5	Cowl....9H6T-84	.....	176	176	14000	3926	6.50/20-6	7.50/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	102.2	7x2¾x.21●	LT
6	Cowl....9R6T-84	.....	176	176	14000	3966	6.50/20-6	7.50/20-8	Own 8RT	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RT	O4IH	302	506	Co	TX	102.2	7x2¾x.21●	LT
	F-5 C.O.E.																													
7	Cab...9HOW-81	1605	110	110	14000	4346	6.50/20-6	7.50/20-8	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	60.06	7x2¾x.21●	LT
8	Cab...9ROW-81	1635	110	110	14000	4386	6.50/20-6	7.50/20-8	Own 8RW	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	60.06	7x2¾x.21●	LT
9	Cab....9HW-81	1635	134	134	14000	4476	6.50/20-6	7.50/20-8	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	84.06	7.08x2.8x‡●	LT
10	Cab....9RW-81	1665	134	134	14000	4516	6.50/20-6	7.50/20-8	Own 8RW	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	84.06	7.08x2.8x‡●	LT
11	Cab...9H8W-81	1665	158	158	14000	4546	6.50/20-6	7.50/20-8	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	108.1	7.08x2.8x‡●	LT
12	Cab...9R8W-81	1695	158	158	14000	4586	6.50/20-6	7.50/20-8	Own 8RW	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RW	O4IH	302	506	Co	TX	108.1	7.08x2.8x‡●	LT
	F-5 School Bus																													
13	Bus Cl..9H8T-84	1315	158	158	12000	3755	6.50/20-6	7.00/20-8	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RTH	O4IH	302	506	Co	TX	128♦	7x2¾x.21●	LT
14	Bus Cl..9R8T-84	1345	158	158	12000	3795	6.50/20-6	7.00/20-8	Own 8RT	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RTH	O4IH	302	506	Co	TX	128♦	7x2¾x.21●	LT
15	Bus Cl..9H4T-84	1530	194	194	15000	4260	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8T	8F	H	5.14-6.67	Own 7RTH	O4IH	302	506	Co	TX	164♦	7.08x2.8x‡●	LT
16	Bus Cl..9R4T-84	1560	194	194	15000	4300	7.50/20-8	8.25/20-10	Own 8RT	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8T	8F	H	5.14-5.67	Own 7RTH	O4IH	302	506	Co	TX	164♦	7.08x2.8x‡●	LT
	F-6																													
17	Cowl..9HTH-84	1610	134	134	15500	3976	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x‡●	LT
18	Cowl..9RTH-84	1640	134	134	15500	4019	7.50/20-8	8.25/20-10	Own 8RT	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	60.06	7.08x2.8x‡●	LT
19	Cowl..9H8TH-84	1640	158	158	15500	4049	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x‡●	LT
20	Cowl..9R8TH-84	1670	158	158	15500	4089	7.50/20-8	8.25/20-10	Own 8RT	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	84.06	7.08x2.8x‡●	LT
21	Cowl..9H6TH-84	.....	176	176	15500	4129	7.50/20-8	8.25/20-10	Own 7HT	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	102.3	7.08x2.8x‡●	LT
22	Cowl..9R6TH-84	.....	176	176	15500	4169	7.50/20-8	8.25/20-10	Own 8RT	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RTH	O4IHV	302	506	Co	TX	102.3	7.08x2.8x‡●	LT
	F-6 C.O.E.																													
23	Cab.9HOWH-81	1990	110	110	16000	4549	7.50/20-8	8.25/20-10	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2¾x.21●	LT
24	Cab.9ROWH-81	2020	110	110	16000	4589	7.50/20-8	8.25/20-10	Own 8RW	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	60.06	7x2¾x.21●	LT
25	Cab...9HWH-81	2020	134	134	16000	4679	7.50/20-8	8.25/20-10	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	84.06	7.08x2.8x‡●	LT
26	Cab...9RWH-81	2050	134	134	16000	4719	7.50/20-8	8.25/20-10	Own 8RW	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	84.06	7.08x2.8x‡●	LT
27	Cab..9H8WH-81	2050	158	158	16000	4749	7.50/20-8	8.25/20-10	Own 8HW	6-3.3x4.4	226	6.8	180	95-3300	4-2.87x5.0	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	108.1	7.08x2.8x‡●	LT
28	Cab..9R8WH-81	2080	158	158	16000	4789	7.50/20-8	8.25/20-10	Own 8RW	8-3⅛x3¾	239	6.8	180	100-3800	3-2.49x5.2	N	Own 41T	4	Own 8TH	Hy	H	6.2 -7.2	Own 7RW	O4IHV	302	506	Co	TX	108.1	7.08x2.8x‡●	LT
	F-7																													
29	Cowl....9EQ-84	2685	135	135	19000	5478	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H	** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	61.06	9x3x.25†	T
30	Cowl....9E7Q-84	.....	147	147	19000	5528	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H	** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	73.06	9x3x.25†	T
31	Cowl....9E9Q-84	2735	159	159	19000	5648	8.25/10-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H	** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	85.06	9x3x.25†	T
32	Cowl....9E8Q-84	.....	178	178	19000	5748	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H	** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	104.1	9x3x.25†	T
33	Cowl....9E5Q-84	2785	195	195	19000	5808	8.25/20-10	9.00/20-10	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQ	5	Own 8Q	Hy	H	** -6.8	Own 7EQ	O4IHV	444	697	Co	TX	121.1	9x3x.25†	T
	F-8																													
34	Cowl..9EQH-84	3155	135	135	21500	5934	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	8F	H	** -7.17	Own 7EQ	O4IHV	485	729	C	TX	61.06	9x3x.25†	T
35	Cowl..9E7QH-84	.....	147	147	21500	5984	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	8F	H	** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	73.06	9x3x.25†	T
36	Cowl..9E8QH-84	.....	178	178	21500	6124	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	8F	H	** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	104.1	9x3x.25†	T
37	Cowl..9E9QH-84	3205	159	159	21500	6224	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	8F	H	** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	85.06	9x3x.25†	T
38	Cowl..9E5QH-84	3255	195	195	21500	6284	9.00/20-10	10.0/20-12	Own 8EQ	8-3½x4½	337	6.4	255	145-3600	3-2.87x5.2	Y	Own 7EQH	5	Own 8QH	8F	H	** -7.17	Own 7EQ	O4IHV■	485	729	C	TX	121.1	9x3x.25†	T
39	Intern'l (2)...KB-1	960	113	125	4400	2250	6.00/16-4	7.00/16	Own GRD214	6-3⅞x4½	213	6.3	160	82-3400	4-2½x6‡‡	N	Own HD8-B	3	Own R1050	8½	H	3.72-5.11	Own F50	L41H	164	316	c	FX	38	6x2¼x¼	T
40	.....KB-1M	875	102	113	5000	2150	6.00/16-4	6.50/16-6	Own GRD214	6-3⅞x4½	213	6.3	160	82-3400	4-2½x6‡‡	N	O SA-HD8-B	3	Own R1050	8½	H	3.72-5.11	Own F150	L41H	164	316	c	FX	....	6½x2¼x‡‡	T
41	.....KB-2	1010	125	125	5200	2285	6.00/16-4	7.00/16-6	Own GRD214	6-3⅞x4½	213	6.3	160	82-3400	4-2½x6‡‡	N	Own HD8-B	3	Own R1050	8½	H	3.72-5.11	Own F50	L41H	164	316	c	FX	50	6♣x2¼x‡‡	T
42	.....KB-3	1150	130	....	6650	3000	7.00/16-6	7.50/16-6	Own GRD214	6-3⅞x4½	213	6.3	160	82-3400	4-2½x6‡‡	N	Own HD8-B	3	Own R1150	8F	H	4.22-5.28	Own F150	L41H	195	367	c	FX	55	6½x2⅛x‡‡	T
43	.....KB-3M	1050	102	113	7000	2585	7.00/16-6	7.50/16-8	Own GRD214	6-3⅞x4½	213	6.3	160	82-3400	4-2½x6‡‡	N	Own H41B	4	Own R1150	8F	H	4.22-5.28	Own F150	L41H	221	367	c	FX	....	6½x2⅛x‡‡	T
44	(a).....KB-5	1320	135	177	15000	3705	6.50/20D	8.25/20	O-GRD 233	6-3⅞x4½	233	6.3	181	93-3400	4-2½x6‡‡	N	Own H41B	4	Own R1360	8F	H	5.28-7.16	Own F350	LH41H	294	509	c	FX	60	8x3‡♣	T
45	(a).....KB-6	1775	134	176	15900	4625	7.00/20D	8.25/20	Own BLD250	6-3⅞x4½	251	6.3	200	100-3200	4-2½x4‡‡	N	Own WT97A	5	Own R1560	8F	H	5.52-7.16	Own 16F470	LH41HV	305	539	c	FX	60	8¼x3♣♣	T
46	(a).....KB-7	2350	134	176	18000	5055	7.50/20D	9.00/20	O-BLD 269	6-3⅞x4½	269	6.3	222	100-3000	4-2.7x4‡‡	N	Own F51	5	Own R1560	8F	H	6.50-7.16	Own F470	LH41HV	368	633	c	FX	60	8¼x3♣♣	T
47	(a).....KB-8	3400	137	197	22000	6580	9.00/20D	10.00/24	O-RED 361	6-4½x4½	361	6.3	282	126-3000	7-3¼x10‡‡	Y	Own F51	5	Own R1572	8F	H	6.43-8.51	Own F553	LH41HV	407	709	c	FX	60	8‡‡x3½x♣♣	T
48	(a).....KB-10	4150	149	197	25000	7405	10.00/20D	11.00/24	Own RED401	6-4½x5	401	6.3	318	140-2800	7-3¼x10‡‡	Y	Own F52	5	Own R1676	8F	H	6.43-8.05	Own F653	LH41HV	484	829	c	FX	72	9¼x3½x♣♣	T
49	(a).....KB-11	5600	149	197	30000	8430	10.00/20D	12.00/24	O-RED 450	6-4½x5	450	6.3	361	148-2600	7-3¼x10‡‡	Y	Own F54	5	Own F55B	5	Tim R100	Hy	H	6.42-8 05	Own F750	WW41A	746	1030	G	FX	72	10x3½x♣♣	T
50	(a).....KB-12	6550	155	215	31500	9175	11.00/20	12.00/20	O-Con. R6586	6-4‡‡x5½	586	6.0	475	200-2600	7-3¼x13½	Y	Own F55	5	Tim R100	Hy	H	** -6.42	Own F750	BW41A	746	....	G	SFX	65	10x3½x♣	C
51	(a).....KBR-14	7150	161	215	35000	10100	11.00/20	12.00/24	O-Con. R6586	6-4‡‡x5½	586	6.0	475	200-2600	7-3¼x13½	Y	Own F55B	5	Tim U200P	2F	H	** -7.08	Own F750	BW41A	746	....	G	SFX	72	10x3½x♣♣	L
52	.....W-3042-L	9900	179	227	30000	12530	10.00/20	11.00/22	Cum HB600	6-4½x6	672	17	492	150-1800	7-4½x . . .	Y	Spl 7741	4	Tim R-100	Hy	H	** -6 42	Own S6303	BW41A	690	....	G	FX	84	10x3½x♣	C
53	.....W-4042-OH	11250	170	230	40000	13115	10.00/20	14.00/24	Cum HB600	6-4½x6	672	17	492	150-1800	7-4½x . . .	Y	Spl 7741	4	Tim 79750PA	2F	H	7.69-11.36	Own 82F	BW41A	656	....	G	FX	72	10x3½x♣♣	C
	School Buses																													
54	.....KB-5	1440	195	....	15000	3935	6.50/20D	8.25/20	Own GRD233	6-3⅞x4½	233	6.3	181	93-3400	4-2½x6‡‡	N	Own H41B	4	Own R1360	8F	H	5.28-7.16	Own F350	LH41H	294	509	C	FX	.....	8♣x3½x♣	T
55	.....KB-6	1900	194	212	17000	4910	7.00/20D	8.25/20	Own BLD250	6-3⅞x4½	251	6.3	200	100-3200	4-2½x4‡‡	N	Own WT97	5	Own R1560	8F	H	5.61-7.16	Own F470	LH41HV	305	539	C	FX	.....	8♣x3♣x♣	T
56	.....KB-7	2525	212	248	19000	5770	7.50/20D	9.00/20	Own BLD269	6-3⅞x4½	269	6.3	222	100-3000	4-2.7x4‡‡	N	Own F51	5	Own R1560	8F	H	6.50-7.16	Own F470	LH41HV	368	633	C	FX	.....	9♣x3♣x♣	T
57	.....KB-8	3675	230	251	22000	6990	9.00/20D	10.00/20	Own RED361	6-4½x4½	361	6.3	282	126-3000	7-3¼x10‡‡	Y	Own F51	5	Own R1572	8F	H	6.43-8.51	Own F553	LH41HV	407	709	C	FX	.....	10x3½x♣	T
58	Kenworth(D)..521	.....	161	215	35000	12200	10.00/20	11.00/22	Cum HB6	6-4⅞x6	672	17	500	150-1800	7-4½x16½	Y	BL 8241	4	Tim U200P	DR	H	6.42-7.84	Tim 36000TW	Ws41A	752	1050	a	TD	72	9½x3¼x♣	C
59	585	.....	150	215	30000	10130	10.00/20	11.00/22	Bu LO525	6-4½x5½	525	5.5	385	150-2200	7-3x11½	Y	Fu 5A620	5	Tim U200P	....	.	6.14	Tim 36000TW	Ws41A	752	....	a	....	70	9½x3¼x♣	....
60	Linn.....L-2	.....	120	....	9000	6000	7.50/20S	8.25/20S	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10‡‡	N	WGT9	4	Own 601	N	N	None	Tim F30B28H	L41H	306	478	a	T	.....	None	....
61	.....L-4	.....	156	....	9200	6200	7.50/20S	8.25/20	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10‡‡	N	WGT9	4	Own 601	N	N	None	Tim F30B28H	L41H	306	478	a	X	.....	None	....
62	.....L-6	.....	169	....	12700	7700	7.50/20D	8.25/20	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10‡‡	N	WGT9	4	Own 602T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	....
63	.....L-8	.....	205	....	12900	7900	7.50/20D	8.25/20	Her JXE3	6-3½x4¼	245	6.5	184	91-3200	7-2½x10‡‡	N	WGT9	4	Own 602T	N	N	None	Tim F30B28H	L6IH	486	744	a	X	.....	None	....
64	Mar. Her...DVL-4	.....	90	118	$6750	.....	7.50/168	8.25/188	Willys MB	4-3½x4½	134	6.4	105	60-4000	3-2.33x5.48	Y	Own	3	(Front Drive)	....	.	7.10	Own	4IH	202	327	M2	.....	.....	None	....

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‡—8200 for 8.25/18 tires.
‡‡—Air brake equipment optional on F-8. Front 10x2¼, Rear 10½x5¼.

●—Reinforcement 6.58x2.21x.125 extended to include front spring rear brackets and rear spring front bracket.
†—Reinforcements 8.5x2.56x.18 starts at front spring rear brackets and ends behind rear spring front brackets.

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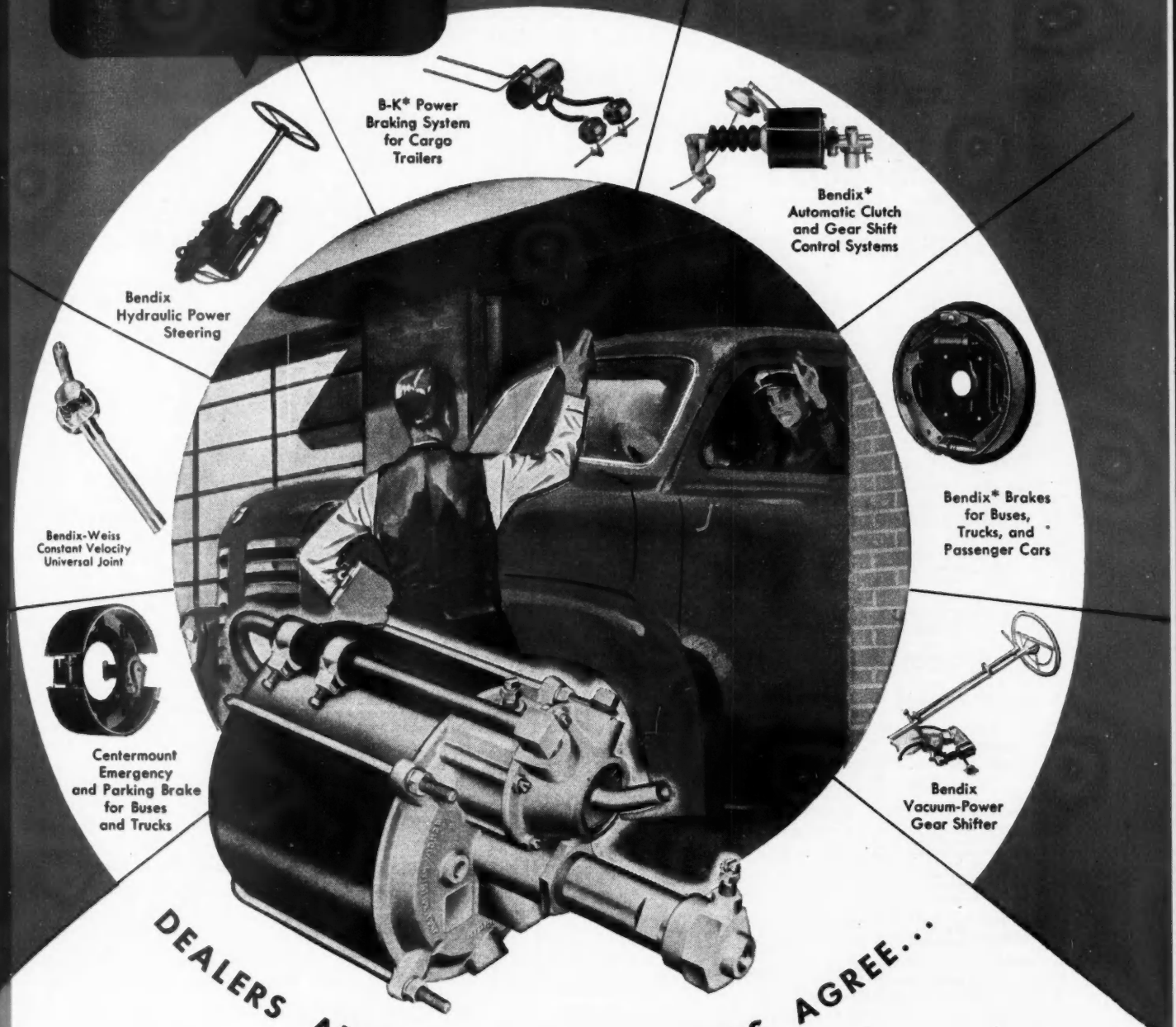
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†—8.00 for 8.25/15 tires.
‡—Air brake equipment optional on F-6. Front 10x3¼. Rear 10½x5½.

•—Reinforcement #.58x2.21x.125 extended to include front spring rear bracket and rear spring front bracket.
†—Reinforcements #.323.482.16 started at front spring rear bracket and ends behind rear spring front bracket.

(Continued from Page 94)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	TRANSMISSION Forward Speeds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
1	Peterbilt(D) . . . 280	. . . . .	175	Opt	35000	12500	10.00/20D	11.00/22	Cum HB600	6–4½x6	672	17	500	150–1800	7–4½x16½	Y	Spi 8041	12	U-200P	2F	R	** –6.42	Tim 36000W	Ws4IA	738	1052	. . .	TD	86½	10½x3½x⅝	CT
2	Reo D–19XA	. . . . .	125	125	8000	4340▲	7.00/208	8.25/208	Own GC 245	6–3 3/16x4 ¼	245	6.2	192	89–3100	7–2 5/16x10.7	Y	WG T97	4	Tim 53547	SF	H	5.66–6.67	Tim 30000	T41H▼	310	482	var	TX	60	8½x2½x½	T
3	. . . . . D–19A	. . . . .	125	125	14000	4740▲	7.50/20	8.25/20	Own GC 245	6–3 3/16x4 ¼	245	6.2	192	89–3100	7–2 5/16x10.7	Y	WG T97	4	T-E100–E300	HF	H	5.28–6.8♦	Tim 30000	T41VH▼	310	482	var	TX	60	8½x2½x½	T
4	. . . . . D–19T	. . . . .	125	125	14000	5330▲	8.25/20	8.25/20	Own GC 245	6–3 3/16x4 ¼	245	6.2	192	89–3100	7–2 5/16x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13–8.10	Tim 30000	T41VH▼	310	482	var	TX	60	8½x2½x½	T
5	. . . . . D–19B	. . . . .	150	150	14000	4900▲	7.50/20	8.25/20	Own GC 245	6–3 3/16x4 ¼	245	6.2	192	89–3100	7–2 5/16x10.7	Y	WG T97	4	T-E100–E300	HF	H	5.28–6.8♦	Tim 30000	T41VH▼	310	482	var	TX	85	8½x2½x½	T
6	. . . . . D–19EX	. . . . .	125	188	15200	4740▲	7.50/20	8.25/20	Own GC245	6–3 3/16x4 ¼	245	6.2	192	89–3100	7–2 5/16x10.7	Y	WG T97	4	T-E100–E300	HF	H	5.28–6.67	Tim 31000	T41VH▼	310	482	var	TX	60	8½x2½x½	T
7	. . . . . D–19C	. . . . .	165	165	14000	5090▲	7.50/20	8.25/20	Own GC 245	6–3 3/16x4 ¼	245	6.2	192	89–3100	7–2 5/16x10.7	Y	WG T97	4	T-E100–E300	HF	H	5.28–6.8♦	Tim 30000	T41VH▼	310	482	var	TX	100	8½x2½x½	T
8	. . . . . D–19L	. . . . .	187	187	14000	5080▲	8.25/20	8.25/20	Own GC 245	6–3 3/16x4 ¼	245	6.2	192	89–3100	7–2 5/16x10.7	Y	WG T97	4	T-E100–E300	HF	H	5.28–6.8♦	Tim 30000	T41VH▼	310	482	var	TX	123	9x3x¼	Tf
9	. . . . . D–21A	. . . . .	125	125	15500	4920▲	7.50/20	8.25/20	Own GC 288	6–3 3/16x5	288	6.2	225	96–3000	7–2 5/16x10.7	Y	WG T97	4	Tim E100	HF	H	5.28–6.8♦	Tim 31013	T41VH▼	310	482	var	TX	60	8½x2½x½	Tf
10	. . . . . D–21T	. . . . .	125	125	15500	5380▲	8.25/20	8.25/20	Own GC 288	6–3 3/16x5	288	6.2	225	96–3000	7–2 5/16x10.7	Y	WG T97	4	Tim E300	HFd	H	6.13–8.10	Tim 31013	T41VH▼	310	482	var	TX	60	8½x2½x½	T
11	. . . . . D–21B	. . . . .	150	150	15500	5230▲	8.25/20	8.25/20	Own GC 288	6–3 3/16x5	288	6.2	225	96–3000	7–2 5/16x10.7	Y	WG T97	4	Tim E100	HF	H	5.28–6.8♦	Tim 31013	T41VH▼	310	482	var	TX	85	9x3x¼	T
12	. . . . . D–21C	. . . . .	165	165	15500	5270▲	8.25/20	8.25/20	Own GC 288	6–3 3/16x5	288	6.2	225	96–3000	7–2 5/16x10.7	Y	WG T97	4	Tim E100	HF	H	5.28–6.8♦	Tim 31013	T41VH▼	310	482	var	TX	100	9x3x¼	Tf
13	. . . . . D–21R–A	. . . . .	130	130	18000	6040▲	9.00/20	9.00/20	Own GC 310	6–3 5/16x5	310	6.2	243	101–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim H200–300	HFd	H	7.3♦	Tim 31104	T41VH▼	344	584	var	TX	65	9x3x¼	T
14	. . . . . D–21R–T	. . . . .	130	130	18000	6380▲	9.00/20	9.00/20	Own GC 310	6–3 5/16x5	310	6.2	243	101–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim H300	HFd	H	5.95–7.3	Tim 31104	T41VH▼	344	584	var	TX	65	9x3x¼	T
15	. . . . . D–21R–B	. . . . .	150	150	18000	6080▲	9.00/20	9.00/20	Own GC 310	6–3 5/16x5	310	6.2	243	101–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim H100–300	HFd	H	6.16–6.8♦	Tim 31104	T41VH▼	344	584	var	TX	85	9x3x¼	T
16	. . . . . D–21R–C	. . . . .	165	165	18000	6180▲	9.00/20	9.00/20	Own GC 310	6–3 5/16x5	310	6.2	243	101–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim H100–300	HFd	H	6.16–6.8♦	Tim 31104	T41VH▼	344	584	var	TX	120	9x3x¼	Tf
17	. . . . . D–21R–L	. . . . .	185	185	18000	6430▲	9.00/20	9.00/20	Own GC 310	6–3 5/16x5	310	6.2	243	101–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim H100–300	HFd	H	6.16–6.8♦	Tim 31104	T41VH▼	344	584	var	TX	120	9½x3½x½	Tf
18	. . . . . D–22A	. . . . .	130	130	20500	6220▲	9.00/20	9.00/20	Own GC 310H	6–3 5/16x5	310	6.2	243	104–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim H300	HFd	H	5.95–7.3	Tim 31104	T41VH▼	370	640	var	TX	65	9x3x¼	T
19	. . . . . D–22T	. . . . .	130	130	20500	6630▲	9.00/20	9.00/20	Own GC 310H	6–3 5/16x5	310	6.2	243	104–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim H300	HFd	H	5.95–7.3	Tim 31104	T41VH▼	370	640	var	TX	65	9x3x¼	T
20	. . . . . D–22B	. . . . .	150	150	20500	6140▲	9.00/20	9.00/20	Own GC 310H	6–3 5/16x5	310	6.2	243	104–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim H Series	HFd	H	6.16–7.3♦	Tim 31104	T41VH▼	370	640	var	TX	85	9x3x¼	T
21	. . . . . D–22C	. . . . .	165	165	20500	6380▲	9.00/20	9.00/20	Own GC 310H	6–3 5/16x5	310	6.2	243	104–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim H Series	HFd	H	6.16–6.8♦	Tim 31104	T41VH▼	370	640	var	TX	100	9x3x¼	Tf
22	. . . . . D–22L	. . . . .	185	185	20500	6430▲	9.00/20	9.00/20	Own GC 310H	6–3 5/16x5	310	6.2	243	104–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim H100–300	HFd	H	6.16–6.8♦	Tim 31104	T41VH▼	370	640	var	TX	120	9½x3½x½	Tf
23	. . . . . D–22R–B	. . . . .	150	150	20500	6480▲	9.00/20	10.00/20	Own GC 310H	6–3 5/16x5	310	6.2	243	104–3000	7–2 5/16x10.7	Y	Cla 205V–VO	5	Tim L100–200	HF2	H	5.28–8.22	Tim 32500	T41VH▼	370	644	var	TX	85	9½x3½x½	T
24	. . . . . E22A	. . . . .	130	130	20000	6165▲	9.00/20	9.00/20	Own 3310A	6–4 1/16x4 ½	331	6.4	264	140–3200	7–2 13/16x9.408	Y	Cla 205V	5	Tim H100–300	HFd	H	6.16–7.2♦	Tim 31104	T41VH▼	370	640	var	TX	65	9x3x¼	T
25	. . . . . E22T	. . . . .	130	130	20000	6740▲	9.00/20	9.00/20	Own 3310A	6–4 1/16x4 ½	331	6.4	264	140–3200	7–2 13/16x9.408	Y	Cla 205V	5	Tim H300–300	HFd	H	6.67–8.85	Tim 31104	T41VH▼	370	640	var	TX	65	9x3x¼	T
26	. . . . . E22B	. . . . .	150	150	20000	6330▲	9.00/20	9.00/20	Own 3310A	6–4 1/16x4 ½	331	6.4	264	140–3200	7–2 13/16x9.408	Y	Cla 205V	5	Tim H100–200	HFd	H	6.16–7.2♦	Tim 31104	T41VH▼	370	640	var	TX	85	9x3x¼	T
27	. . . . . E22C	. . . . .	170	170	20000	6465▲	9.00/20	9.00/20	Own 3310A	6–4 1/16x4 ½	331	6.4	264	140–3200	7–2 13/16x9.408	Y	Cla 205V	5	T H100–H300	HFd	H	6.16–7.2♦	Tim 31104	T41VH▼	370	640	var	TX	105	9x3x¼	Tf
28	. . . . . E22L	. . . . .	185	185	20000	6600▲	9.00/20	9.00/20	Own 3310A	6–4 1/16x4 ½	331	6.4	264	140–3200	7–2 13/16x9.408	Y	Cla 205V	5	T H100–H300	HFd	H	6.16–7.2♦	Tim 31104	T41VH▼	370	640	var	TX	120	9½x3½x½	Tf
29	. . . . . E22RA	. . . . .	130	130	22000	6605▲	10.00/20	10.00/20	Own 3310A	6–4 1/16x4 ½	331	6.4	264	140–3200	7–2 13/16x9.408	Y	Cla 205V	5	T L100–L300	HFd	H	6.16–7.4♦	Tim 32500	T41VH▼	422	644	var	TX	65	9x3x¼	T
30	. . . . . E22RT	. . . . .	130	130	22000	7205▲	10.00/20	10.00/20	Own 3310A	6–4 1/16x4 ½	331	6.4	264	140–3200	7–2 13/16x9.408	Y	Cla 205V	5	Tim L300–300	HFd	H	6.32–8.22	Tim 32500	T41VH▼	422	644	var	TX	65	9x3x¼	T
31	. . . . . E22RB	. . . . .	150	150	22000	6770▲	10.00/20	10.00/20	Own 3310A	6–4 1/16x4 ½	331	6.4	264	140–3200	7–2 13/16x9.408	Y	Cla 205V	5	Tim L100–200	HFd	H	6.16–7.4♦	Tim 32500	T41VH▼	422	644	var	TX	85	9x3x¼	T
32	. . . . . E22RC	. . . . .	170	170	22000	6905▲	10.00/20	10.00/20	Own 3310A	6–4 1/16x4 ½	331	6.4	264	140–3200	7–2 13/16x9.408	Y	Cla 205V	5	Tim L100–300	HFd	H	6.16–7.4♦	Tim 32500	T41VH▼	422	644	var	TX	105	9x3x¼	Tf
33	. . . . . E22RL	. . . . .	185	185	22000	7040▲	10.00/20	10.00/20	Own 3310A	6–4 1/16x4 ½	331	6.4	264	140–3200	7–2 13/16x9.408	Y	Cla 205V	5	Tim L100–300	HFd	H	6.16–7.4♦	Tim 32500	T41VH▼	422	644	var	TX	120	9½x3½x½	Tf
34	. . . . . D–23T	. . . . .	130	130	23000	8000▲	10.00/20	10.00/20	Con T–6427	6–4 7/16x4 ⅛	427	6.0	335	146–2800	7–2 1/16x13.6	Y	Cla 270V–VO	5	Tim L100–300	HFd	H	5.28–6.16♦	Tim 32500	BW41A	514	644	var	TX	65	9½x3½x½	T
35	. . . . . D–23L	. . . . .	185	185	23000	7900▲	10.00/20	10.00/20	Con T–6427	6–4 7/16x4 ⅛	427	6.0	335	146–2800	7–2 1/16x13.6	Y	Cla 270V–VO	5	Tim L100	HF	H	5.28–6.16	Tim 32500	BW41A	514	644	var	TX	120	9½x3½x½	Tf
36	. . . . . D–23S–A	. . . . .	130	130	23000	7150▲	9.00/20	10.00/20	Con T6371	6–4 1/16x4 ⅛	371	6.3	292	126–2600	7–2 7/16x13.6	Y	Cla 270 VO	5	Tim 58300	HF	H	** –7.8	Tim 32500	T41VH▼	370	644	var	TX	65	9½x3½x½	T
37	. . . . . D–23S–T	. . . . .	130	130	23000	7770▲	9.00/20	10.00/20	Con T6371	6–4 1/16x4 ⅛	371	6.3	292	126–2600	7–2 7/16x13.6	Y	Cla 270 VO	5	Tim 58300	HF	H	** –7.8	Tim 32500	T41VH▼	370	644	var	TX	65	9½x3½x½	T
38	. . . . . D–23S–B	. . . . .	150	150	23000	7575▲	9.00/20	10.00/20	Con T6371	6–4 1/16x4 ⅛	371	6.3	292	126–2600	7–2 7/16x13.6	Y	Cla 270 VO	5	Tim 58300	HF	H	** –7.8	Tim 32500	T41VH▼	370	644	var	TX	85	9½x3½x½	T
39	. . . . . D–23S–C	. . . . .	165	165	23000	7590▲	9.00/20	10.00/20	Con T6371	6–4 1/16x4 ⅛	371	6.3	292	126–2600	7–2 7/16x13.6	Y	Cla 270 VO	5	Tim 58300	HF	H	** –7.8	Tim 32500	T41VH▼	370	644	var	TX	100	9½x3½x½	Tf
40	. . . . . D–23S–L	. . . . .	185	185	23000	7680▲	9.00/20	10.00/20	Con T6371	6–4 1/16x4 ⅛	371	6.3	292	126–2600	7–2 7/16x13.6	Y	Cla 270 VO	5	Tim 58300	HF	H	** –7.8	Tim 32500	T41VH▼	370	644	var	TX	120	9½x3½x½	T
41	. . . . . D–23R–T	. . . . .	130	130	25000	8580▲	10.00/20	11.00/20	Con T–6427	6–4 7/16x4 ⅛	427	6.0	335	146–2800	7–2 1/16x13.6	Y	Cla 270V–VO	5	Tim Q100–300	HFd	H	6.16♦	Tim 35011	BW41A	638	934	var	TX	65	9½x3½x½	T
42	. . . . . D–23R–B	. . . . .	150	150	25000	8570▲	10.00/20	11.00/20	Con T–6427	6–4 7/16x4 ⅛	427	6.0	335	146–2800	7–2 1/16x13.6	Y	Cla 270V–VO	5	Tim S200	HF2	H	7.84♦	Tim 35011	BW41A	712	1038	var	TX	85	9½x3½x½	T
43	. . . . . D–23R–BL	. . . . .	150	150	25000	9060▲	10.00/20	11.00/20	Con T–6427	6–4 7/16x4 ⅛	427	6.0	335	146–2800	7–2 1/16x13.6	Y	Cla 270VO&v	15	Tim S200	HF2	H	7.84♦	Tim 35011	BW41A	712	1038	var	TD	85	9½x3½x½	T
44	. . . . . D–23R–L	. . . . .	185	185	25000	8300▲	10.00/20	11.00/20	Con T–6427	6–4 7/16x4 ⅛	427	6.0	335	146–2800	7–2 1/16x13.6	Y	Cla 270V–VO	5	Tim Q100–300	HFd	H	6.16♦	Tim 35011	BW41A	638	934	var	TX	120	9½x3½x½	Tf
45	. . . . . 30–A	. . . . .	△145	145	32000	11000▲	11.00/20	11.00/24	Con R–6513	6–4 1/16x5 ⅜	513	5.9	400	173–2800	7–3 ¼x14.7	Y	Spi6252A–53♦	5	TS300–U200	HFd	H	7.08♦	Tim 36000	BW41A	722	1038	var	TI	67	10½x3½x½	T
46	. . . . . 30–B	. . . . .	△165	165	32000	11750▲	11.00/20	11.00/24	Con R–6513	6–4 1/16x5 ⅜	513	5.9	400	173–2800	7–3 ¼x14.7	T	Spi6252A–53♦	5	TS300–U200	HFd	H	7.08♦	Tim 36000	BW41A	722	1038	var	TI	87	10½x3½x½	T
47	. . . . . 31–A	. . . . .	△145	145	32000	11000▲	11.00/20	11.00/24	Con R–6602	6–4 1/16x5 ⅜	602	5.9	464	202–2800	7–3 ¼x14.7	Y	Spi6252A–53♦	5	TS300–U200	HFd	H	7.08♦	Tim 36000	BW41A	722	1038	var	TI	67	10½x3½x½	T
48	. . . . . 31–B	. . . . .	△165	165	32000	11750▲	11.00/20	11.00/24	Con R–6602	6–4 1/16x5 ⅜	602	5.9	464	202–2800	7–3 ¼x14.7	T	Spi6252A–53♦	5	TS300–U200	HFd	H	7.08♦	Tim 36000	BW41A	722	1038	var	TI	87	10½x3½x½	T
49	School Buses,																														
50	. . . . . C119–31	. . . . .	152	152	. . . . .	. . . . .	7.00/20	7.00/20	Own GC 245	6–3 3/16x4 ½	245	6.2	192	89–3100	7–2 5/16x10.7	Y	Cla 185F	4	Tim 53547	SF	H	6.16	Tim 30000	T41VH▼	310	482	var	TX	. . . .	9x3x¼	T
51	. . . . . C119L–43	. . . . .	188	188	. . . . .	. . . . .	7.50/20	7.50/20	Own GC 245	6–3 3/16x4 ½	245	6.2	192	89–3100	7–2 5/16x10.7	Y	Cla 185F	4	Tim 53547	SF	H	6.67	Tim 31013	T41VH▼	310	482	var	TX	. . . .	9x3x¼	T
52	. . . . . C119LS–49	. . . . .	206	206	. . . . .	. . . . .	7.50/20	7.50/20	Own GC 245	6–3 3/16x4 ¼	245	6.2	192	89–3100	7–2 5/16x10.7	Y	WG T97	4	Tim 53547	SF	H	6.67	Tim31013	T41VH▼	314	532	var	TX	. . . .	9½x3½x½	T
53	. . . . . C121–49	. . . . .	206	206	. . . . .	. . . . .	8.25/20	8.25/20	Own GC 288	6–3 5/16x5	288	6.2	225	96–3000	7–2 5/16x10.7	Y	Cla 231F	4	Tim E100	HyF	H	6.80	Tim31104	T41VH▼	314	532	var	TX	. . . .	9½x3½x½	T
54	. . . . . C121S–55	. . . . .	224	224	. . . . .	. . . . .	8.25/20	8.25/20	Own GC 288	6–3 5/16x5	288	6.2	225	96–3000	7–2 5/16x10.7	Y	WG T97	4	Tim E100	HyF	H	6.80	Tim31104	T41VH▼	314	532	var	TX	. . . .	9½x3½x½	T
55	. . . . . C122–55	. . . . .	224	224	. . . . .	. . . . .	9.00/20	9.00/20	Own GC 310	6–3 5/16x5	310	6.2	243	101–3000	7–2 5/16x10.7	Y	Cla 231F	4	Tim H100	HyF	H	7.20	Tim31104	T41VH▼	344	584	var	TX	. . . .	9½x3½x½	T
56	. . . . . C–122–L	. . . . .	252	252	. . . . .	. . . . .	9.00/20	9.00/20	Own GC 310	6–3 5/16x5	310	6.2	243	101–3000	7–2 5/16x10.7	Y	Cla 231F	4	Tim H100	HyF	H	7.2	Tim 32500	T41VH	344	588	var	TX	. . . .	9½x3½x½	T
57	Sterling HD97	. . . . .	148	175	24000	9150	9.00/20	11.00/20	Wau 6MZA	6–4 1/16x4 ¾	404	5.6	290	130–3000	7–2 5/16x12 ½	Y	Fu 5A43	5	TimQ100DPH	FHy	R	5.29–7.80	Tim 35011H	T41HV	524	926	A	TX	67	9x7x¼	A
58	. . . . . HD105	. . . . .	148	175	24000	9550	10.00/20	11.00/22	Wau 6MZA	6–4 1/16x4 ¾	404	5.6	290	130–3000	7–2 5/16x12 ½	Y	Fu 5A43	5	TimR100DPH	FHy	R	5.29–7.40	Tim 35011H	T41HV	524	926	A	TX	67	9x3¼x¼	A
59	. . . . . HD115	. . . . .	148	175	32000	10650	10.00/20	11.00/24	Wau 6SRKR	6–4 9/16x5 ½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62	5	Tim S200P	2F	R	6.42–9.83	Tim 36000TW	Ws4IA	722	1054	A	TX	67	9x3¼x¼	A
60	. . . . . HD145	. . . . .	148	175	36000	11250	11.00/20	12.00/24	Wau 6SRKR	6–4 9/16x5 ½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62	5	Tim 79721W	2F	R	7.69–11.36	Tim 36000TW	Ws4IA	670	1118	A	TX	67	9¼x3½x⅜	A
61	(D) HD115H	. . . . .	158	185	32000	11950	10.00/20	11.00/24	Cum HB600	6–4 1/16x6	672	17	500	150–1800	7–4 1/16x16 ½	Y	Fu 4B86	4	Tim S200P	2F	R	6.42–9.83	Tim 36000TW	Ws4IA	722	1054	A	TX	68	9x3¼x¼	A
62	(D) HD145H	. . . . .	158	185	36000	12550	11.00/20	12.00/24	Cum HB600	6–4 1/16x6	672	17	500	150–1800	7–4 1/16x16 ½	Y	Fu 4B86	4	Tim 79721W	2F	R	7.69–11.36	Tim 36000TW	Ws4IA	670	1118	A	TX	68	9¼x3½x⅜	A
63	. . . . . HC97	. . . . .	148	175	24000	9200	9.00/20	11.00/20	Wau 6MZA	6–4 1/16x4 ¾	404	5.6	290	130–3000	7–2 5/16x12 ½	Y	Fu 5A43	5	Own 97H	CD	R	6.70–10.82	Tim 35011H	T41HV	518	852	A	TX	67	9x7x¼	A
64	. . . . . HC105	. . . . .	148	175	28000	9700	10.00/20	11.00/22	Wau 6MZA	6–4 1/16x4 ¾	404	5.6	290	130–3000	7–2 5/16x12 ½	Y	Fu 5A43♦	15	Own 137H	CD	R	6.70–10.82	Tim 35011H	TL41HV	540	842	A	TX	67	9x3¼x¼	A
65	. . . . . HC115	. . . . .	148	175	32000	10350	10.00/20	11.00/24	Wau 6SRKR	6–4 9/16x5 ½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62♦	15	Own 137W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	648	1064	A	TX	67	9x3¼x¼	A
66	. . . . . HC144	. . . . .	148	175	36000	11250	10.00/22	12.00/24	Wau 6SRKR	6–4 9/16x5 ½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62♦	15	Own 148W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	708	1102	A	TX	67	9¼x3½x⅜	A
67	. . . . . HC147	. . . . .	148	175	36000	11500	10.00/22	12.00/24	Wau 6SRKR	6–4 9/16x5 ½	517	5.5	368	125–2250	7–3x13¾	Y	Fu 5A62♦	15	Own 147W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	708	1102	A	TX	67	9¼x3½x⅜	A
68	. . . . . HC175	. . . . .	167	185	45000	14600	12.00/24†	14.00/24‡	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86●	12	Own 175W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3½x⅝	AL
69	. . . . . HC250	. . . . .	178	190	60000	18400	14.00/24†	14.00/24‡	Wau 145GK	6–5¼x6	779	6.2	585	186–2100	7–3½x17¾	Y	Fu 4B86●	12	Own 251W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3½x⅝	AL
70	(D) HC115H	. . . . .	167	185	32000	12250	10.00/20	11.00/24	Cum HB600	6–4 1/16x6	672	17	500	150–1800	7–4 1/16x16 ½	Y	Fu 4B86●	12	Own 137W	CD	R	6.70–10.82	Tim 36000TW	Ws4IA	648	1064	A	TX	77	9x3¼x¼	A
71	(D) HC175H	. . . . .	167	185	45000	14930	12.00/24†	14.00/24‡	Cum HBD600	6–4 1/16x6	672	17	500	150–1800	7–4 1/16x16 ½	Y	Fu 4B86●	12	Own 175W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	TX	77	9¼x3½x⅜	A
72	(D) HC250H	. . . . .	178	190	60000	18700	14.00/24†	14.00/24‡	Cum HBD600	6–4 1/16x6	672	17	500	150–1800	7–4 1/16x16 ½	Y	Fu 4B86●	12	Own 251W	CD	R	7.31–12.42	Tim 27454W	Ws4IA	786	1212	A	JX	95	12x3½x⅝	AL

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† Rear only; Front 11.00/24.
‡ Includes Cast Axle available.
▲ Variable speed Axle available.
● Auxiliary transmission Own FJ.
▼—Lockheed type front and Timken dual primary rear brakes.
♦ Auxiliary Transmission Own GJ.
△ 6031 F–O Spicer Transmission available. Special W.B.'s available on request.

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MACK OWNERS *are in the* Profit Picture

● Whether it's gasoline or diesel power that best fits your particular hauling conditions — *either way* you're in the profit picture with Mack. That's because only Mack has such a complete line of both gasoline and diesel-powered trucks.

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** This means there is a Mack diesel-powered unit to meet legal limits of any state.*

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Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES SERVICE: Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Studebaker....2R5	1022	112	112	4600	2125	6.00/168	6.50/168	Own 1R	6-3x4	170	6.5	134	80-4000	4-2⅛x5⅞	N	Own 673519	3	Own 673874	Hy	H	**-4.82	Own 677574	Wg4IH	170	276	CO	2I	40	7x2⅛x⅛	T
2	.....2R10	1088	122	122	6100	2400	6.50/168	7.50/168	Own 1R	6-3x4	170	6.5	134	80-4000	4-2⅛x5⅞	N	Own 673519	3	Own 677806	SF	H	5.57-4.86	Own 677574	Wg4IH	198	314	CO	2I	50	7⅛x2⅛x⅞	T
3	.....2R15-21	1236	121	121	7800	3005	7.00/17S	7.00/20	Own 2R	6-3x4	170	6.5	134	80-4000	4-2⅛x5⅞	N	Own 676044	4	Own 677768	SF	H	5.83-6.66	Own 677091	LH4IH	226	342	Ce	TX	50½	8x2⅜x⅞	T
4	.....2R15-31	1255	131	131	10000	3065	7.00/17S	7.00/20	Own 2R	6-3x4	170	6.5	134	80-4000	4-2⅛x5⅞	N	Own 676044	4	Own 677768	SF	H	5.83-6.66	Own 677091	LH4IH	226	342	Ce	TX	60¼	8⅛x2½x⅞	T
5	.....2R16	1291	131	195	14000	3695	6.50/20D	8.25/20	Own 3R	6-3⅞x4½	226	6.5	174	94-3400	4-2½x5⅜	N	Own 676045	4	Own 675732‡	SF	H	6.66-5.66	Own 674484	LH4IH	294	442	Ce	TX	60¼	8½x2⅜x⅞	T
6	.....2R16A	1326	131	195	14000	3695	6.50/20 D	8.25/20	Own 4R	6-3⅞x4½	245	6.5	200	100-3400	4-2½x5	N	Own 678790	4	Own 675732‡	SF	H	6.66-5.66	Own 674484	LH4IH	294	442	Ce	TX	60¼	8½x2⅜x⅞	T
7	.....2R17	1592	131	195	16000	4180	7.50/20D	8.25/20	Own 3R	6-3⅞x4½	226	6.5	174	94-3400	4-2¼x5⅜	Y	Own 676045	4	Own 675571‡	Hy	H	6.80-....	Own 674484	LH4IH	367	553	Ce	TX	60¼	8½x2⅜x⅞	P
8	.....2R17A	1627	131	195	16000	4180	7.50/20 D	8.25/20	Own 4R	6-3⅞x4½	245	6.5	200	100-3400	4-2½x5	N	Own 678794	4	Own 675571‡	Hy	H	6.80-	Own 674484	LH4IH	367	553	Ce	TX	60¼	8½x2⅜x⅞	P
9	Ward La Fr. ..D-1	.....	149	220	25000	▲ 9500	10.00/20	11.00/20	Con T6427	6-4⅞x4½	427	5.1	340	152-2600	7-2⅛x13½	Y	Ful 5A430	5	Tim Q-100	B	R	**-6.83	Tim 35017TW	Ws4A	600	928	C	TM	68¼	9½x3x¼	....
10	.....D-1C	.....	149	220	29000	▲ 9500	11.00/20	11.00/22	Con T6427	6-4⅞x4½	427	5.1	340	152-2600	7-2½x13½	Y	Ful 5A430	5	Tim S-200	S2	R	**-7.08	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	9½x3x¼	....
11	.....D-2K	.....	149	220	29000	▲10000	11.00/20	11.00/22	Wau 140GK	6-4½x5½	525	6.4	425	168-2400	7-2¾x13⅜	Y	Ful 5A620	5	Tim S-200	S2	R	**-7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	10x3½x⅞	....
12	.....D-2Z	.....	149	220	29000	▲10000	11.00/20	11.00/20	Wau 140GZ	6-4½x5½	554	6.4	456	184-2400	7-3¼x13⅛	Y	Ful 5C650	5	Tim S-200	S2	R	**-7.84	Tim 35017TW	Ws4A	673	1031	C	TM	68¼	10x3½x⅞	....
13	.....D-3	.....	149	220	29000	▲10000	11.00/20	11.00/22	Con R6572	6-4¾x5¾	572	5.9	440	189-2600	7-3¼x14½	Y	Ful 5C650	5	Tim S-200	S2	R	**-7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68¼	10x3½x⅞	....
14	.....D-38	.....	149	220	29000	▲10000	11.00/20	11.00/22	Con R6602	6-4⅞x5¾	602	5.9	463	198-2600	7-3¼x14½	Y	Ful 5C650	5	Tim S-200	S2	R	**-7.84	Tim 35017TW	Ws4B	673	1031	C	TM	68¼	10x3½x⅞	....
15	.....D-5	.....	149	220	35000	▲12500	11.00/22	11.00/22	Cum HB600	6-4¾x6	672	17	500	150-1800	7-4½x16¾	Y	Ful 5C650	5	Tim U-200	S2	R	**-6.42	Tim 27463	Ws4B	681	1041	C	TM	68¼	10x3½x⅞	....
16	Willys (Sd.Del.)463	1295•	104	104	4000	•2752	6.50/158	.....	Own 463	4-3½x4½	134	6.5	105	63-4000	3-2.33x2.48	N	WG T96	3	Spl 23-1	Hy‡	H	4.88-5.38	Own I Tr	B4IH	133	220▲	a	2I	.....	5x2¼x.063	TfD
17	Willys.....2WD	1295•	118	118	5300	•2788	6.50/168‡	7.00/168	Own 2WD	4-3½x4½	134	6.5	105	60-4000	3-2.33x5.48	N	WG T90E	3	Tim51540NX4	S‡	H	5.38-6.17	Cla F-154	B4IH	176	276▲	a	2I	42.28	5½x2x⅛	TD
	Four-Wheel-Drive																														
18	Corbitt 22FG	.....	159	Opt	22000	.....	9.00/20	10.00/20	Con B6371	6-4½x4½	371	6.0	280	100-2600	7-2½x13½	Y	Fu 5A43	5	Tim R2090H	2F	H	** -8.43	Tim F2090H	L4IHV	....	868	a	TD	74	9x3x¼	DL
19	Dodge....B-1-P W	.....	126	126	8700	.....	7.50/16-8	9.00/16-8	Own T-137	6-3¼x4½	230	6.7	185	94-3200	4-2½x4.8	Y	NP-38580	4	Own T-137	HyF	H	4.8-5.8	Own T-137	O4IH	210	311	c	TX	52½	⅛x2⅛x6½	C
20	FWD.....HA	.....	132	168	17000	▲7470	8.25/20D	10.00/20	Wau BZ	6-4x4½	320	5.9	237	104-3000	7-2¾x10¼	Y	Own H	5	Own H	SF	H	6.6 -9.01	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
21	.....HR	.....	132	168	20000	▲8000	9.00/20	10.00/20	Wau MZA	6-4¼x4½	404	5.6	291	129-2800	7-2⅝x12½	Y	Own H	5	Own H	SF	H	6.6 -9.01	Own H	L4IHV	391	807	a	T4	79½	9x3x¼	T
22	.....HC	.....	154	154	20000	▲8050	9.00/20	10.00/20	Wau MZA	6-4¼x4¼	404	5.6	291	129-2800	7-2⅝x12½	Y	Own H	5	Own H	SF	H	6.6 -9.01	Own H	L4IHV	391	807	a	T4	89¾	7⅛x2⅜x⅛	C
23	.....SU	.....	150	182	28000	▲10570	11.00/20D	11.00/20	Wau SRKR	6-4½x5½	517	5.5	365	126-2400	7-3x13⅛	Y	Own U	5	Own U	BF	H	6.7 -9.8	Own U	L4IHV	512	867	a	T4	90	8⅛x3x⅛	C
24	.....YU	.....	150	182	30000	▲11570	11.00/20D	12.00/20	Wau 140GK	6-4½x5½	525	6.4	425	142-2200	7-3¼x13⅜	Y	Own S	5	Own YU	SF	H	5.7-10.8	Own YU	L4IHV	517	814	a	T4	90	8⅛x3x⅛	C
25	.....ZU	.....	150	182	33000	▲12540	11.00/20D	12.00/20	Wau 140GZ	6-4½x5½	554	6.4	460	188-2600	7-3¼x13⅜	Y	Own S	5	Own ZU	SF	H	6.79-12.59	Own ZU	L4IHV	640	1106	a	T4	90	10⅛x3x⅛	C
26	.....M7	.....	150	180	38600	▲15500	12.00/20D	12.00/24	Wau 145GK	6-5¼x6	779	6.2	585	186-2000	7-3½x17¾	Y	Own M	10	Tim 1758	2F	H	** -7.33	Wis F409	Ws4IA	584	976	a	T4	90	10⅛x3x⅛	C
27	(D).....M7D	.....	150	180	38600	▲15700	12.00/20D	12.00/24	Bu DC844	6-o¼x6½	844	...	605	180-1800	7-3¼x17	Y	Own M	10	Tim 1758	2F	H	** -7.33	Wis F409	Ws4IA	584	976	a	T4	90	10⅛x3x⅛	C
28	.....M10	.....	150	180	44000	▲8800	11.00/24D	12.00/24	Wau 145GK	6-5¼x6	779	6.2	585	186-2000	7-3½x16¾	Y	Own M	10	Tim 79721	2F	H	** -7.7	Wis F409	Ws4IA	614	1030	a	T4	90	10⅛x3x⅛	C
29	(D).....M10D	.....	150	180	44000	▲16400	11.00/24D	12.00/24	Bu DC844	6-5¼x6½	844	...	605	180-1800	7-3¼x17	Y	Own M	10	Tim 79721	2F	H	** -7.7	Wis F409	Ws4IA	614	1030	a	T4	90	10⅛x3x⅛	C
30	Marmon-MH440-4	.....	158	170	24000	▲9800	9.00/20D	10.00/20	Her WXLC3	6-4¼x4½	404	5.4	293	118-2800	7-2¼x13¼	Y	Fu 5A430	5	Own 1121	2B	H	** -8.43	Own 121	W....A	584	887	c	F	72	9⅛x3x¼	T
31	Herr...MH-RC 4	.....	161	....	26000	10550	9.00/20	10.00/20	Her RXC	6-4¼x5¼	529	6.3	390	131-2200	7-3x13¼	Y	Fu	5	Own 1121	2B	H	** -8.43	Own 121	W....A	584	....	....	F	72	9⅛x3x¼	T
32	.....MH555-4	.....	161	173	30000	▲11550	10.00/20D	11.00/20	Her RXC	6-4⅝x5¼	529	6.3	390	131-2200	7-3x13¼	Y	Fu 5A620	5	Own 1122	2B	H	** -8.15	Own 122	W....A	692	1039	c	F	72	10⅛x3x⅛	T
33	.....MH-RH 4	.....	161	....	33000	11980	10.00/20	11.00/20	Her RXLDH	6-4¾x5¼	558	6.1	440	180-2600	7-3x13¼	Y	Fu	5	Own 1122	2B	H	** -8.15	Own 122	W....A	696	....	....	F	72	10⅛x3x⅛	T
34	(C).....R5-4	.....	134	134	15500	▲4847	7.50/20D	7.50/20	Ford	8-3⅛x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	** -6.67	Own M5	F....H	303	563	a	F	60▲	7x2¼x⅛	T
35	(C).....R6-4	.....	158	158	15500	▲4973	7.50/20D	7.50/20	Ford	8-3⅛x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	** -6.67	Own M5	F....H	303	563	a	F	84▲	7x2¼x⅛	T
36	(C).....LD7-4	.....	114	....	5300	▲3500	15°	15°	Ford	8-3⅛x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	** -4.11	Own O	F....H	162	....	A	F	40▲	5⅛x2¼x⅛	T
37	(C).....R3-4	.....	122	....	6800	▲4100	7.50/17	7.50/17	Ford	8-3⅛x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	** -4.86	Own I	F....H	186	....	A	F	48	6x2¼x⅛	T
38	(C).....R4-4	.....	134	....	10000	▲4900	7.00/20S	7.00/20	Ford	8-3⅛x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	**-5.33	Own	F....H	303	563	A	F	60▲	7x2¼x⅛	T
39	(C)..R5-A-COE4	.....	110	158	15500	▲5660	7.50/20D	7.50/20	Ford	8-3⅛x3¾	239	6.4	180	100-3800	3-2½x4.71	N	Ford	4	Ford	8	H	**-6.67	Own	F....H	303	563	A	F	60▲	7.08x2.8x¼	T
40	(C).....Q5-4	.....	136	....	21500	▲7200	9.00/20	10.00/20	Ford	8-3½x4½	337	6.4	255	145-3600	3-2½x5.21	...	Ford	5	Ford	H	H	** -6.80	Own	F...H	350	583	A	F	61	9x3x ¼	T
41	(C).....Q6-4	.....	160	....	21500	▲7300	9.00/20	10.00/20	Ford	8-3½x4½	337	6.4	255	145-3600	3-2½x5.21	...	Ford	5	Ford	H	H	** -6.80	Own	F...H	350	583	A	F	85	9x3x ¼	T
42	.....Q7-4	.....	196	....	21500	▲7500	9.00/20	10.00/20	Ford	8-3½x4½	337	6.4	255	145-3600	3-2½x5.21	...	Ford	5	Ford	H	H	** -6.80	Own	F...H	350	583	A	F	85	9x3x ¼	T
43	Oshkosh....W-312	.....	149	205	25000	▲10200	10.00/20D	11.00/20	Her WXLC03	6-4¼x4¾	404	6.3	312	139-2600	7-2⅝x13¾	Y	Fu 5A43	10	Own W312	SF	H	**-6.8	Own W312	L4II	510	876	G	TX	82	8¼x3x⅜	TF
44	.....W1700	.....	150	205	28000	▲11000	11.00/20D	12.00/20S	Her RXC	6-4½x5¼	529	5.4	395	131-2200	7-3x13¼	Y	Fu 5A620	5	Own W1700	SF	H	**-6.4	Own 1700	L4IH	570	980	G	TX	82	8¼x3x⅜	TF
45	.....W-700	.....	150	205	30000	▲12000	11.00/20D	12.00/20	Her RXCO	6-4¾x5¼	529	5.4	395	131-2200	7-3x12¾	Y	Fu 5A650	10	Own W700	2F	H	**-6.8	Own W700	L4IH	630	975	G	TX	82	10⅛x3x⅜	TF
46	(D)....W-703D	.....	150	205	30000	▲12700	11.00/20D	12.00/20	Her DRXC	6-4½x5¼	529	15.	398	147-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	**-6.8	Own W700	L4IHA	630	975	G	TX	82	10⅛x3x⅜	TF
47	.....W-703	.....	150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6-4¾x5¼	558	5.4	430	150-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	**-6.8	Own W700	L4IH	630	975	G	TX	82	10⅛x3x⅜	TF
48	.....W-705	.....	150	205	30000	▲12200	11.00/20D	12.00/20	Her RXLD	6-4¾x5¼	558	5.4	430	150-2200	7-3½x13¼	Y	Fu 5A650	10	Own W700	2F	H	**-6.8	Own W700	L4IH	630	975	G	TX	82	10⅛x3x⅜	TF
49	.....W-712	.....	150	205	34000	12600	11.00/20D	12.00/20	Her RXLDH	6-4¾x5¼	558	...	462	190-2600	7-3½x13¼	Y	Fu 5A650	10	Own W712	2F	H	**-6.8	Own W712	L4IH	630	975	G	TX	82	10⅛x3x⅜	TF
50	(D).....W-906	.....	158	181	38000	▲15600	12.00/20D	14.00/20S	Cum HB600	6-4⅞x6	672	...	500	150-1800	7-4½x16	Y	Fu 4A86	12	Own W906	2F	H	**-6.2	Own W906	LT4IWS	645	975	G	TX	90	12⅛x3x¾	TF
51	(D).....W906R	.....	158	181	39000	15700	12.00/20D	14.00/20S	Cum 6HRB	6-5½x6	743	...	540	165-1800	7-4½x16	Y	Eu 4A86	12	Own W906R	2F	H	**-6.2	Own W906R	LT4IWS	645	975	G	TX	90	10½x3 ⅛x¾	TF
52	.....W2200	.....	160	181	40000	▲16500	13.00/20D	14.00/20S	Bu MO779	6-5¼x6	779	...	575	188-2100	7-3¾x17	Y	Fu 4A86	12	Own W2200	2F	H	**-6.15	Own 2200	LT4IA	645	975	G	TX	90	10¾x3½x¾	LF
53	.....W2201	.....	160	181	40000	▲16500	13.00/20D	14.00/20S	Bu MO893	6-5¼x6	893	...	670	200-1800	7-3¾x17	Y	Fu 4A86	12	Own W2201	2F	H	**-6.15	Own 2201	LT4IA	645	975	G	TX	90	10¾x3½x¾	TF
54	(D).....W2204	.....	160	181	46000	▲18500	13.00/20D	14.00/24	Bu 6DC844	6-5¼x6 ½	844	...	605	180-1800	7-3¼x17	Y	Fu 4A86	12	Own W2204	2F	H	**-6.4	Own 2204	LT4IA	780	1190	G	TX	90	10¾x3½x¾	LF
55	.....W2205	.....	160	181	54000	▲19500	13.00/20D	14.00/24	Bu 6DCS844	6-5¼x6 ½	844	...	740	240-2100	7-3¾x17	Y	Fu5A920	12	Own W2205	2F	H	**-6.3	Own W2205	LT4IA	780	1190	G	TX	90	10¾x3½x¾	LF
56	.....W2206	.....	160	181	54000	▲19000	13.00/24D	14.00/24	HS 400	6-5¼x7	■	5.7	930	295-2000	7-3¼x14 ⅛	Y	Fu5A1120	10	Own W2206	2F	H	**-6.3	Own W2206	LT4IA	780	1190	G	TX	90	10⅛x3½x¾	LF
57	.....W2208	.....	160	181	46000	17700	13.00/20D	14.00/24	Cum NH600	6-5½x6	743	...	535	200-2100	7-4½x16½	Y	Fu 4A86	12	Own W2208	2F	H	**-6.4	Own W2208	LT4IA	780	1190	G	TX	90	10⅛x3½x¾	TF
58	Sterling....DD115	.....	160	178	32000	11500	10.00/20	11.00/24	Wau 6SRKR	6-4½x5½	517	5.5	368	125-2250	7-3x13⅞	Y	Fu 5A62♦	10	Tim 1357W	2F	H	6.52-8.6	Tim F3110W	Ws4IA	644	984	A	TX	76	9x3¼x¼	A
59	(D)....DD145H	.....	167	185	36000	13900	11.00/20	12.00/24	Cum HB600	6 4¼x6	672	17.	500	150-1800	7-4½x16½	Y	Fu 4B86▽	10	Tim 1758W	2F	H	7.33-10.3	Tim F409CW	Ws4IA	644	984	A	TX	77	9¼x3½x⅛	A
60	Walter(c.f.)....FN	.....	126	150	20000	7500	9.00/20D	10.00/20S	Wau MZA	6-4¼x4¾	404	5.6	290	125-2600	7-2⅝x12½	Y	Own FN	6	Own FNB	2	H	6.0-8.0	Own FN	O4IA	470	670	G	FI	84	7x2¼x¼	C
61	(c.f.)..FZM	.....	126	150	24000	8500	10.00/20D	12.00/20S	Wau MZA	6-4¼x4¾	404	5.6	290	125-2600	7-2⅝x12½	Y	Own FMB	6	Own FMB	2	H	6.0-8.0	Own FJ	O4IA	470	670	G	FI	84	12x3½x½	B
62	(c.f.)..FCK	.....	126	138	30000	10500	10.00/24D	11.00/24S	Wau 8RKR	6-4½x5½	517	5.5	365	125-2200	7-3x13⅞	Y	Own FC	6	Own FCB	2	H	7.5-9.0	Own FC	O4IA	585	890	D	FI	84	13x3¾x½	B
63	(c.f.)..FC	.....	138	162	32000	11000	11.00/24D	12.00/24S	Wau 8RKR	6-4½x5½	517	5.5	365	125-2200	7-3x13⅞	Y	Own FC	6	Own FCB	2	H	7.5-9.0	Own FCR	O4IA	585	890	D	FI	96	14x3¾x½	B
64	(c.f.)..FGB	.....	126	162	32000	12000	11.00/24D	12.00/24S	Wau 145GK	6-5¼x6	779	5.7	580	185-2000	7-3½x17¾	Y	Own FA	6	Own FCB	2	H	7.5-9.0	Own FCR	O4IA	585	890	D	FI	84	14x3¾x½	B
65	(c.f.)..FGR	.....	126	162	42000	13000	12.00/24D	12.00/24	Wau 145GK	6-5¼x6	779	5.7	580	185-2000	7-3½x17¾	Y	Own FA	6	Own FCR	2	H	7.5-9.0	Own FCR	O4IA	585	890	D	FI	89	14x3¾x½	B

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‡ Rear only; Front 6.00/16.
• Complete vehicle with pick-up type body.

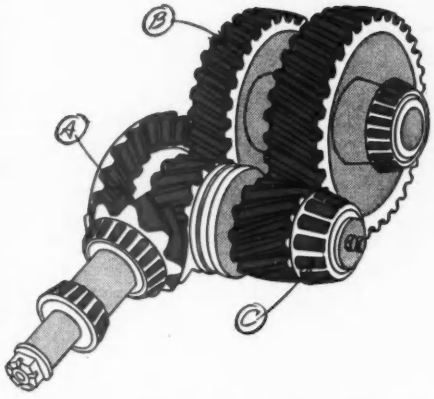
▲ 2 speed 6.13-8.10 optional
▲ Includes cab.

■—1090 cu. in.
♦—Timken T76-Two speed transfer case.

▽ Timken T77 2-speed Transfer Case.

STANDARD ENGINEER'S CASE FILE

Case 1126—Providing Safe Lubrication for Hypoids



HYPOID-HELICAL, DOUBLE-REDUCTION DRIVE

A commercial transfer truck with RPM Multi-Service Gear Lubricant in its hypoid gears, hauled 10-ton average loads for 165,000 miles without the differential being touched. The truck is still in use every day and the gears are quiet and show no noticeable wear. Recommended for all hypoid gears. Made in four grades: SAE 75, 80, 90, and 140.

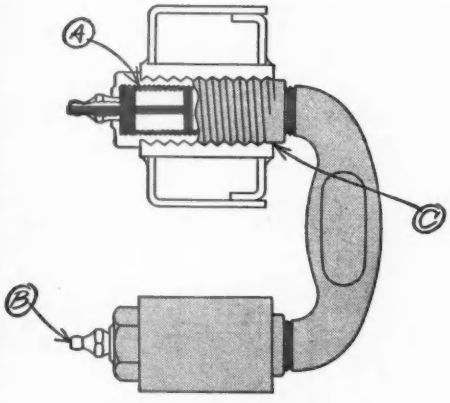
A. Resists rubbing action of hypoid gear teeth . . . compound reacts chemically with metal and forms protective lubricating coating.

B. Resists extreme temperatures and pressures . . . highly oxidation resistant.

C. Extremely stable — will not separate . . . provides tough lubricating film on integral bearings and other parts.

Inhibitors in RPM Multi-Service Gear Lubricant resist rusting of parts and prevent foaming.

Case 1128—Reducing Chassis Bearing Wear



U-TYPE SPRING SHACKLE

Replacement of shackle bearings, kingpins, fifth wheel plates, etc., on a fleet of trucks and busses was reduced materially by regular lubrication with RPM Chassis Grease T-B. Recommended for all chassis lubrication in any operation. Comes in 3 grades, Light, Medium, Heavy, to meet all climatic conditions.

A. Resists shock loads . . . effective anti-wear ingredient assures cushioning film between parts.

B. Pumps easily and feeds to entire bearing surface — prevents "spot wear" from shifting bearing loads. Special stringiness additive helps keep lubricating film on bearings under all conditions.

C. Forms protective seal at outside edges of bearings — keeps out dust, grit and water.

Extremely stable, RPM Chassis Grease T-B will not change in structure while in use or in storage.

For additional information and the name of your nearest Distributor, write

STANDARD OIL COMPANY OF CALIFORNIA

225 Bush Street, San Francisco 20, California

The California Oil Company
Barber, N. J., Chicago, New Orleans

The California Company
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RPM

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(Continued from Page 98)

Line Number	MAKE AND MODEL	Chassis List Price	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	REAR AXLE Gear and Type	REAR AXLE Drive & Torque	REAR AXLE Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operation	BRAKES SERVICE Lining Area	BRAKES SERVICE Drum Area	BRAKES SERVICE Drum Material	BRAKES Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	FRAME Type
1	Ward La Fr..FD1	.....	...	...	35000	▲11500	11.00/22	11.00/22	Cont 6513	6-4½x5¼	513	5.9	405	180–2800	.....		Ful 5A620	5	Tim R462W	.....	**	–8.15	Tim F3100W	BW4IA	.....	.....	Co	.....	.....	10x3x¼	....
2	(D).....FD2	.....	...	...	35000	▲12000	11.00/24	11.00/24	Cum HB600	6–5½x6	672	17.	500	150–1800	.....		Ful 5A920	5	Tim R462W	.....	**	–8.15	Tim F3100W	BW4IA	.....	.....	Co	.....	.....	10x3x¼	....
3	Willys Jp...CJ-3A	1195*	80	80	3500	*2169	6.00/16	7.00/15	Own CJ-3A	4–3½x4½	134	6.5	105	60–4000	3–2.33x5.48	N	WG T90C	‡6	Spl 41-2	Hy‡	H	**	–5.38	Spl 25	B4IH	118	198	a	F	42.28	4x1½x¼	P
4	.....4WD	1695*	118	118	5300	*2920	7.00/16	.....	Own 4WD	4–3½x4½	134	6.5	105	60–4000	3–2.33x5.48	Y	WGT90A	‡6	Tim51540NX4	S½	H	**	–5.38	Spl 25	B4IH	176	276	a	2I		5½x2x¼	TD
	Six-Wheelers																														
	Wheels ▼ Driven																														
5	Dodge...B-I-VX	.....	154	190	34000	.....	9.00/20	10.00/20	Own T159	6–3¾x5	331	6.5	270	128–3000	7–3x11.2	Y	NP 88450	5	Tim 8BD1555	HyF	..	6.8 –7.2	T-35020NX9	O6IA	727	1056	C	TX	84	10x3x¼	CP
6																															
7	Duplex....TH6	.....	162	220	30000	9180	8.25/20	9.00/20	Her JXD	6–4x4½	320	6.2	240	113–3000	7–2½x10‡‡	Y	Fu 5B33▲	10	Tim 8BD1055	BF	L	**–6.16	Tim 32502H	L6IHV	513	839	A	TX	83¼	9½x3½x¼	L
8	.....RH-6	.....	160	208	40000	11500	10.00/20	11.00/20	Her WXLC3	6–4½x4¾	404	5.8	312	134–2600	7–2½x13¼	Y	Fu 5A43	5	Tim SD3010	2F	R	8.27	Tim 35100	WS61A	1075	1525	A	TX	73¼	10½x3½x¼	L
9	(D).....L6	.....	172	208	45000	15000	11.00/20	12.00/20	Cum HB600	6–4½x6	672	17.	495	150–1800	7–4½x16½	Y	Spl 5A920	5	Tim SD454	SF2	L	6.8–8.15	Tim 26450	Ws6IA	1137	1625	A	TX	77¾	10½x3½x¼	L
10	Federal....663MA	.....	189	225	.....	14500	10.00/20	10.00/22	Con R6602	6–4½x5⅜	602	...	464	200–2600	7–3¼x14½	Y	Fu 5A65▼	12	T SW3012P	WF	R	** –6.16	Tim 36000TW	Ws6IA	1082	1569	a	TD	108	10½x3½x¼	T
11	.....664MAB	.....	189	225	.....	15850	11.00/22	12.00/20	Con R6602	6–4½x5⅜	602	...	464	200–2600	7–3¼x14½	Y	Spl 7741▼	12	Tim SW456P	WF	R	** –7.6	Tim 27452W	Ws6IA	1308	1888	a	TD	108	10½x3½x¼	T
12	.....664MA	.....	189	225	.....	1o950	11.00/22	12.00/20	Con R6602	6–4½x5⅜	602	...	464	200–2600	7–3¼x14½	Y	Spl 7741▼	12	Tim SD462P	BR	R	** –8.15	Tim 27452W	Ws6IA	1092	1624	a	TD	108	10½x3½x¼	T
13	.....629M	.....	163	199	.....	8600	8.25/20	9.00/20	Her JXDF	6–4x4¼	320	...	250	112–2800	7–2½x10‡‡	Y	Cla 205V‡‡▲	10	T8BD1055dph	8F	R	7.53 10.35	Tim 32514H	LT61HV	544	914	a	TX	84	9½x3½x¼	TL
14	.....629ML	.....	163	199	.....	8635	8.25/20	9.00/20	Her JXLDF	6–4x4½	339	...	272	126–2800	7–2½x10‡‡	Y	Cla 205V‡‡▲	10	T8BD1055dph	8F	R	7.53 10.35	Tim 32514H	LT61HV	544	914	a	TX	84	9½x3½x¼	T
15	.....635M	.....	167	203	.....	10400	9.00/20	9.00/20	Con T6371F	6–4½x4½	371	...	290	133–2600	7–2½x13½	Y	Cla 270VO▲	10	T8BD1555dph	8F	R	8.33 11.47	Tim 35011H	LT61HV	752	1132	a	TX	84¼	10½x3½x¼	T
16	.....645M	.....	167	215	.....	12325	10.00/22	10.00/22	Con T6427F	6–4¼x4⅞	427	...	342	155–2600	7–2½x13½	Y	Cla 270VO	5	*T-SD3010P	BR	R	** –9.16	Tim 35011TW	Ws6IA	1073	1550	a	TD	84½	10½x3½x¼	T
17	F.W.D.....H6x6	.....	Opt	Opt	29000	12150	9.00/20D	10.00/20	Wau MZA	6–4¼x4¾	404	5.6	290	129–2800	7–2½x12½	Y	Own H	10	Own H	8F	L	** –7.45	Own H	L4IHV	647	1281	a	T6	Opt	9x3x¼	T
18	.....M6x6	.....	Opt	Opt	58000	▲21400	11.00/24D	11.00/24	Wau 145GK	6–5¼x6	779	6.2	585	186–2000	7–3½x17¾	Y	Own M	10	Wis SD462	2F	L	** –10.6	Wis F409	Ws6IA	1080	1680	a	T6	120	10¼x3x‡‡	P
19	(D)....M6X6D	.....	Opt	Opt	58000	▲21600	11.00/24D	11.00/24	Bu DC844	6–5½x6½	844	...	605	180–1800	7–3¾x17	Y	Own M	10	Wis SD462	2F	L	** –10.6	Wis F409	Ws6IA	1080	1680	a	T6	120	10¼x3x‡‡	P
20	International (2)																														
21	.....KB-6F.4R	3300	151	194	24000	7010	7.50/20D	8.25/20	Own BLD250	6–3¼x4½	251	6.3	200	100–3200	4–2½x5‡‡	N	Own F51	5	Own RF1450	SF	H	6.16–6.66	Own F470	LH61HV	495	869	c	PX	77	8½x¼x¼	T
22	.....KB-8F.4R	4950	161	215	30000	8670	8.25/20D	9.00/20	Own RED361	6–4½x4½	361	6.3	282	126–3000	7–3¼x10‡‡	Y	Own F52	5	Own RF1560	SF	H	6.50–7.16	Own F550	LH61HV	644	1105	c	PX	84	9¼x3¼x½	T
23	.....KB-11F.4R	7425	161	215	41000	10830	9.00/20D	10.00/20	Own RED450	6–4⅝x5½	451	6.3	360	148–2600	7–3¼x10‡‡	Y	Own F54	5	Own RF1670	SF	H	** –7.16	Own F760	LH61HV	738	1179	G	PX	84	10x3¼x⅝	C
24	.....W4064L	12925	203	239	40000	15750	10.00/22	11.00/22	Cum HB600	6–4½x6	672	17.	492	150–1800	7–4½x....	Y	Spl 7741	4	Tim SW3012	WF	L	4.71–6.16	Own 82F	BW61A	876	.....	.....	PX	108	10x3½x¼	L
25	.....W4564OH	13750	188	242	45000	16635	10.00/22	11.00/22	Cum HB600	6–4½x6	672	17.	492	150–1800	7–4½x....	Y	Spl 7741	4	Tim SW456	WF	H	6.00–7.6	Own 83F	BW61A	1020	.....	.....	PX	90	10x3½x¼	L
26	.....W6564OH	15700	206	302	65000	19895	11.00/24	12.00/24	Cum HB600	6–4½x6	672	17.	492	150–1800	7–4½x....	Y	Spl 7741	4	Tim SD466	2F	H	8.15–11.66	Own 82F	BW61A	.....	.....	.....	PX	108	10x3½x¼	L
	Kenworth																														
27	.....(D).....522	.....	187	245	43000	12900	10.00/20	11.00/22	Cum HB6	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	T U200P&††	.....	.....	.....	Tim FE900	Ws41A	1135	.....	.....	.....	.....	.....	9½x3¼x¼	....
28	.....(D)523.4R	.....	193	241	41000	14600	10.00/20	11.00/22	Cum HB6	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	TSW3012PA	WF	R	** –6.16	Tim FE900	Ws4rIA	924	1248	a	TD	102	9½x3¼x¼	C
29	.....(D)524.4R	.....	193	241	54000	15100	10.00/20	11.00/22	Cum HB6	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim SW456	WF	R	6.0 –7.6	Tim FE900	Ws4rIA	819	1192	a	TD	102	9½x3¼x¼	C
30	.....(D)548.4R	.....	193	241	54000	17000	11.00/22	12.00/24	Cum HB6	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim SDF460	DR	R	** –8.15	Tim FE900	Ws4rIA	819	1192	a	TD	109	9½x3¼x¼	dbC
31	.....(D)552.4R	.....	255	255	54000	20700	13.00/24	13.00/24	Cum HB6	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	Tim SDF460	WF	R	** –8.15	Tim F3200W	Ws4rIA	1109	1192	a	TD	168	9½x3¼x¼	dbC
32	(D).....584	.....	193	241	95000	24800	12.00/24	14.00/24	Cum HB6	6–4¼x6	672	17.	500	150–1800	7–4½x6½	Y	BL 7841	4	Tim SD472	WF	R	8.07–11.56	Shu 12	Ws4rIA	.....	2235	a	TD	109	9½x3¼x¼	dbC
33	(D).....825	.....	193	241	42000	14900	10.00/20	11.00/22	Cum HB6	6–4½x6	672	17.	500	150–1800	7–4½x16½	Y	BL 8241	4	T GSW458P	WF	..	6.0–7.6	Tim FE900	Ws4rIA	1016	....	a	TD	102	9½x3¼x¼	C
34	829	.....	186	234	42000	14650	10.00/20	11.00/22	Bud LO525	6–4½x5½	525	5.5	385	150–2200	7–3x11¼	Y	Fu5A620	5	T SD3010P	DR	R	–8.27	Tim FE900	Ws4rIA	924	....	a	TD	104	9½x3¼x¼	C
35	(D).....888	.....	219	....	110000	29400	14.00/24	.....	Cum NHB6	6–5½x6	743	17	575	200–2100	7–4½x6½	Y	BL 7841	4	Tim CDB79	WF	C	**–14.71	Shu 12	Ws4rIA	....	2447	a	TD	129	10¼x3¼x‡‡	dbC
	Marmon-Herr.																														
36	(C).....R5-6	.....	156	....	22500	▲6673	7.50/20D	7.50/20	Ford	8–3¼x3¼	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	M	503	....	a	F	82	7 ½x3x ¼	C
37	(C).....R6-6	.....	180	....	22500	▲6710	7.50/20D	7.50/20	Ford	8–3¼x3¼	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Timken	S	H	** –6.67	Own M5	M	503	....	a	F	106	7 ½x3x ¼	C
38	.....MH440-6	.....	182	....	34000	▲10600	9.00/20	10.00/20	Her WXLC3	6–4¼x4¼	404	5.4	239	118–2800	7–2½x13¼	Y	Fu 5A430	5	Own 1123	2B	H	** –8.43	Own 121	Ws..A	876	....	C	F	96	9½x3x ¼	T
39	.....MH-555-6	.....	182	....	42000	▲14900	11.00/20	11.00/20	Her RXC	6–4⅝x5¼	529	6.3	390	131–2200	7–3x13¼	Y	Fu 5A620	5	Own 1124	2B	H	** –8.15	Own 122	Ws..A	1092	1608	..	F	93	10¼x3x¼	T
40	(C)...R5-COE6	.....	156	180	22500	7410	7.50/20D	7.50/20	Ford	8–3¼x3¼	239	6.4	180	100–3800	3–2½x4.71	N	Ford	4	Fore	S	H	6.67	Own	F...H	303	563	A	F	....	7.08x2.8x½	T
41	(C).....Q-5-6	.....	160	....	35000	▲9550	9.00/20	10.00/20	Ford	8–3½x4¾	337	6.4	255	145–3600	3	..	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	..	F	85	9x3x ¼	T
42	(C).....Q-6-6	.....	184	....	35000	▲9700	9.00/20	10.00/20	Ford	8–3¼x4¾	337	6.4	255	145–3600	3	..	Ford	5	Ford	....	H	** –6.80	Own	F...H	350	583	..	F	109	9x3x ¼	T
	Oshkosh																														
43	.....W703-6X6	.....	Opt	Opt	47000	16950	11.00/20D	12.00/20	Her RXLD	6–4⅝x5¼	558	5.4	430	150–2200	7–3½x13¼	Y	Fu 5A650	12	Tim SD454W	2F	H	** –6.31	Own-Tim	L6IH	1080	1625	G	TX	Opt	10 ½ 3 ½ ⅜	B
44	(D)...W1600BD	.....	245	Opt	60000	22770	11.00/24D	12.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	** –6.14	Own-Tim	LT6IA	1080	1625	G	TX	160	12⅜–3½–⅜	B
45	(D)...**W1600BDH	.....	267	Opt	60000	24300□	11.00/24D	12.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	–9.82	Own-Tim	LT6IA	1080	1625	G	TX	174	12⅜–3½–⅜	B
46	(D)...**W1602BDH	.....	272	Opt	95000	29300	14.00/24D	14.00/24	Bu 6DC844	6–5¼x6½	844	...	600	180–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD472	2F	H	–13.9	Own-Tim	LT6IA	.....	2217	G	TX	177	12⅜–3½–⅜	B
47	.....W1600BG	.....	245	Opt	60000	22770	11.00/24D	12.00/24	Bu MO893	6–5⅝x6	893	...	625	200–1800	7–3¾x17	Y	Fu 4BI86	12	Tim SD462	2F	H	–9.82	Own-Tim	LT6IA	1080	1625	G	TX	160	12⅜–3½–⅜	B
48	(D)...W1600CD	.....	259	Opt	60000	23400□	11.00/24D	12.00/24	Cum 6HBI	6–4½x6	672	...	500	150–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	–6.14	Own-Tim	LT6IA	1080	1625	G	TX	174	12⅜–3½–⅜	B
49	(D)...W1600CDS	.....	259	Opt	60000	23700□	11.00/24D	12.00/24	Cum 6HBIS	6–4½x6	672	...	635	200–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	–9.82	Own-Tim	LT6IA	1080	1625	G	TX	174	12⅜–3½–⅜	B
50	(D)...**W1600CDH	.....	265	Opt	60000	24000□	11.00/24D	12.00/24	Cum 6HBI	6–4½x6	672	...	500	150–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	–9.82	Own-Tim	LT6IA	1080	1625	G	TX	172	12⅜–3½–⅜	B
51	(D)**W1600CDSH	.....	267	Opt	60000	24300□	11.00/24D	12.00/24	Cum 6HBIS	6–4½x6	672	...	635	200–1800	7–4½x16	Y	Fu 4BI86	12	Tim SD462	2F	H	–6.14	Own-Tim	LT6IA	1080	1625	G	TX	174	12⅜–3½–⅜	B
52	Peterbilt (D)...350	.....	193	Opt	42000	.....	10.00/20D	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SW3012W	WF	R	6.00– 8.5	T 36000W	Ws6IA	1125	1569	...	TD	99½	10½x3½x¼	CT
53	(D).....360	.....	198	Opt	54000	.....	10.00/20D	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SW456W	WF	R	6.00–10.2	T 36000W	Ws6IA	1005	1517	...	TD	104½	10½x3½x¼	CT
54	(D).....370	.....	198	Opt	58000	.....	10.00/20D	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SW456W	WF	R	6.00–10.2	T 27463	Ws6IA	1084	1626	...	TD	104½	10½x3½x¼	CT
55	(D).....380	.....	194	Opt	58000	.....	10.00/20D	11.00/22	Cum HB600	6–4¼x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SD462W	2F	R	** –8.07	T 27463	Ws6IA	1084	1626	...	TD	98½	10½x3½x¼	CT
56	(D).....390	.....	197	Opt	79000	.....	12.00/24	14.00/24	Cum HB600	6–4¾x6	672	17.	500	150–1800	7–4½x16½	Y	Spl 8041	12	Tim SD472W	2F	R	** –8.07	T 27463	Ws6IA	1622	2215	...	TD	103½	10½x3½x¼	CT
57	Reo.....D-216, 4R	.....	167	203	28000	9170▲	8.25/20	8.25/20	Own GC310	6–3½x5	310	6.2	243	101–3000	7–2½x10.7	Y	Cla 205V-VO	5	Tim SBD1055	SF	T	6.16–7.4	Tim 32500	T61IHV▼▼	500	842	Var	TX	102½	9½x3½x¼	TfP
58	.....D-226R, 4R	.....	167	203	34000	9782▲	8.25/20	9.00/20	Own GC310H	6–3½x5	310	6.2	243	104–3000	7–2½x10.7	Y	Cla 205V–VO	5	Tim SBD1555	SF	T	6.78–13.1	Tim 32500	T6IVH▼▼	560	944	var	TD	102½	9½x3½x¼	TfP
59	.....D-236, 4R	.....	169	200	47000	13060▲	10.00/20	10.00/20	Con T-6427	6–4¼x4⅞	427	6.2	336	153–2800	7–2⅞x13.6	Y	Cla270V-VO▲	15	Tim SD3010	SF2	T	7.5	Tim 36000	Ws6IA	1082	1570	var	TD	104⅛	9½x3½x¼	TfP
60	.....D-306, 4R	.....	214	214	45000	15500▲	10.00/20	10.00/22	Con R–6513	6–4½x5½	513	5.9	400	173–2800	7–3¼x14.7	Y	Spl 6252A-53	5	Tim SD3010	SF2	T	**–7.5	Tim 36000	Ws6IA	1082	1570	Var	TD	136½	10½x3½x⅝	Tf
61	.....D-316, 4R	.....	186	248	56000	16000▲	10.00/20	10.00/22	Con R–6602	6–4½x5½	602	5.9	464	203–2800	7–3¼x14.7	Y	Spl6252A-53‡	15	Tim SD454	SF2	T	7.33–8.15	Tim 36000	Ws6IA	1230	1778	var	TD	108	10½x3½x⅝	TfP

▲ Includes Cab.
▼▼—Lockheed type front and Timken dual primary rear brakes.
(Turn to Page 102, please)

‡ 8031F-G Spicer Auxiliary Transmission Available.
▼ Auxiliary transmission Spicer 703F with 3 forward speeds.
‡ Three speed transmission—2 speed transfer case.

** Hydraulic Coupling.
†† Timken T13126 PA Trailing Axle.
▲ Torque divider, Timken 170–2 speed.

□ Chassis weights on duals Front, Center and Rear.
* Complete vehicle with pickup type body.
* Auxiliary transmission spicer 6231B at extra cost gives 15 forward speeds.

‡ 6231 Spicer Auxiliary Transmission.
‡‡ Overdrive optional.

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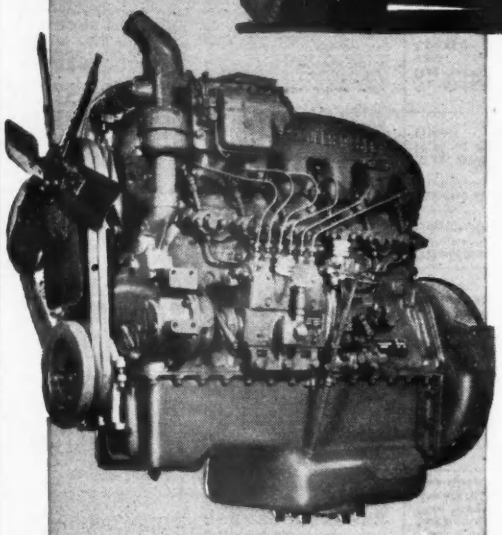

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- Weighs only 485 lbs. more than comparable gasoline engines.
- High Torque Characteristics flatten out the hills and grades.
- 7 Bearing Crankshaft means smoother operation.
- Patented Combustion Chamber assures high operating efficiency.

Write Today for Complete Information

GASOLINE • DIESEL

FEDERAL TRUCKS

Since 1910

FEDERAL MOTOR TRUCK CO.
DETROIT 9, MICHIGAN, U.S.A.

• Auxiliary transmission Spicer 703F with 3 forward speeds. • Torque divider, Timken 170-2 speed. • Auxiliary transmission spicer 823B at extra cost gives 15 forward speeds. • Three speed transmission—2 speed transfer case.

(Turn to Page 102, please)

Streak-Free Bus and Truck Washing in LESS TIME

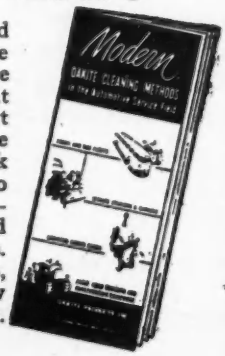
You can get streak-free surfaces in less time and with decidedly less effort when you wash your buses and trucks with scientifically designed, quick-acting . . .

Oakite Body-Washing Materials

Unusually effective detergent properties of Oakite Body-Washing materials thoroughly remove all grease, grime and road-traffic dirt. But best of all, you'll find surfaces dry down CLEAN—WITHOUT CHAMOISING . . . bright appearance is restored WITHOUT HURTING paint, lacquer and enamel . . . WITHOUT DAMAGING decals or top varnish.

FREE Booklet Tells You How!

Service shop managers and mechanics should have the FREE "Oakite Automotive Cleaning Booklet" close at hand. It not only tells about the SAFE, FAST Oakite way to better bus and truck washing, but tells how to streamline all cleaning, descaling, desludging and paint-stripping procedures. Write to Oakite Products, Inc., 26D Thames St., New York 6, N. Y., for your copy.



Technical Service Representatives in Principal Cities in U.S. & Canada

OAKITE

REG. U. S. PAT. OFF.

SPECIALIZED INDUSTRIAL CLEANING

MATERIALS • METHODS • SERVICE

(Continued from Page 100)

Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES Standard Front and Rear	TIRE SIZES D-dual rear S-single rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings Number Diameter and Length	Governor Standard	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	SERVICE BRAKES Make Location Type Operation	Lining Area	Drum Area	Drum Material	Hand Location Type	C.A Dimensions (Min. Std. W. B.)	FRAME Side Rail Dimensions	Type
1	Sterling																																
2	HB8130																																
3	HD8140																																
4	HW8160																																
5	HW8235																																
6	(D) HW8235H																																
7	(D) HW8160H																																
8	HC8105																																
9	HC8265																																
10	HC8237																																
11	HC8270																																
12	(D) HC8195H																																
13	(D) HC8265H																																
14	(D) HC8297H																																
15	(D) HC8330H																																
16	Truckstell																																
17	(C) F2X28 2F	156	237		28500		8.25/20-10			Ford	6 3⅞x3¾	236	6	180	100-3800	2	49x4.9	N Ford		4 Ford ■■	SF	H5	8-11	Ford		82½	8x2	8x 46	TL
18	(C) F2X29-0(coe) 2F	134	224		28500		8.25/20-10			Ford	6 3⅞x3¾	236	6	180	100-3800	2	49x4.9	N Ford		4 Ford ■■	SF	H5	8-11	Ford		82½	8x2	8x 46	TL
19	(C) F2X28-7 2F	156	250		28000		8.25/20-10			Ford	6 3⅞x3¾	236	6	180	100-3800	2	49x4.9	N Ford		5 Ford ■■	Hy	H6	8	Ford		82½	9	8x33x½	TL
20	(C) F2X34-7 2F	156	250		34000		9.00/20-10			Ford	6 3⅞x3¾	336	4	255	145-3600	2	87x5.0	Y Ford		5 Ford ■■	Hy	H6	8	Ford		82½	9	8x33x½	TL
21	(C) F2X34-8 2F	156	250		34000		9.00/20-10			Ford	6 3⅞x3¾	336	4	255	145-3600	2	87x5.0	Y Ford		5 Ford ■■	SF	H6.5	8-87	Ford		82½	9	8x33x½	TL
22	(C) F2X38 2F	156	250		40000		10.0/20-10			Ford	6 3⅞x3¾	336	4	255	145-3600	3	x 87x5.0	Y Ford		5 Ford ■■	SF	H6.5	8-87	Ford		82½	9	8x33x½	TL
23	(C) F4X28 4F	157	247		28000		8.25/20-10			Chev.	6 3⅞x3¾	235	6	192	93-3100	4	8d.Chev	Y Chev.		4 Chev ▶▶	HyF	H6.17		Chev.		82½	9	8x33x½	TL
24	(C) F4X29-0(coe) 4F	130	224		28000		8.25/20-10			Chev.	6 3⅞x3¾	235	6	192	93-3100	4	8d.Chev	Y Chev.		4 Chev ▶▶	HyF	H6.17		Chev.		82½	9	8x33x½	TL
25	(C) F4X27 (coe) 4R	124	185		27000		7.50/20*			Ford	6 3⅞x3¾	236	6	180	100-3800	2	49x4.9	N Ford		8 Ford ▶▶	SF	R	●●●.●	67 Ford		498	8.6	8x33x½	TL
26	F4X334 4R	156	228		34000		9.00/20*			Ford	6 3⅞x3¾	336	4	255	145-3600	2	87x5.0	Y Ford		8 Ford ▶▶	Hy	R	●●●.●	67 Ford		700	8.87	9x33x½	TL
27	F4X338 4R	156	228		38000		9.00/20*			Ford	6 3⅞x3¾	336	4	255	145-3600	2	87x5.0	Y Ford		8 Ford ▶▶	HyF	R	●●●.●	67 Ford		625	8.87	9x33x½	TL
28	C4X30 (coe) 4R	131	193		30000		8.25/20*			Chev.	6 3⅞x3¾	235	6	192	93-3100	4	8d.Chev	Y Chev.		8 Chev ▶▶	HyF	R	●●●.●	17 Chev.		550	8.16	9x33x½	TL
29	C4X38 4R	156	228		38000		9.00/20*			Ford	6 3⅞x3¾	336	4	255	145-3600	2	87x5.0	Y Ford		8 Ford ▶▶	HyF	R	●●●.●	67 Ford		625	8.87	9x33x½	TL
30	C4X40 4R	156	228		40000		9.00/20*			Ford	6 3⅞x3¾	336	4	255	145-3600	3	x 87x5.0	Y Ford		8 Ford ▶▶	HyF	R	●●●.●	67 Ford		625	8.87	9x33x½	TL
31	C4X50 (coe) 4R	131	193		50000		8.25/20*			Chev.	6 3⅞x3¾	235	6	192	93-3100	4	8d.Chev	Y Chev.		8 Chev ▶▶	HyF	R	●●●.●	17 Chev.		550	8.16	9x33x½	TL
32	C4X60 (coe) 4R	131	193		60000		8.25/20*			Chev.	6 3⅞x3¾	235	6	192	93-3100	4	8d.Chev	Y Chev.		8 Chev ▶▶	HyF	R	●●●.●	17 Chev.		550	8.16	9x33x½	TL
33	F4X534 4R	156	228		34000	10000	9.00/20*			Ford	6 3⅞x3¾	336	4	255	145-3600	2	87x5.0	Y Ford		8 Ford ▶▶	Hy	R	●●●.●	67 Ford		700	8.87	9x33x½	TL
34	F4X538 4R	156	228		38000	10000	9.00/20*			Ford	6 3⅞x3¾	336	4	255	145-3600	2	87x5.0	Y Ford		8 Ford ▶▶	HyF	R	●●●.●	67 Ford		625	8.87	9x33x½	TL
35	C4X50 (coe) 4R	131	193		50000	7500	8.25/20*			Chev.	6 3⅞x3¾	235	6	192	93-3100	4	8d.Chev	Y Chev.		8 Chev ▶▶	HyF	R	●●●.●	17 Chev.		550	8.16	9x33x½	TL
36	C4X60 (coe) 4R	131	193		60000	7500	8.25/20*			Chev.	6 3⅞x3¾	235	6	192	93-3100	4	8d.Chev	Y Chev.		8 Chev ▶▶	HyF	R	●●●.●	17 Chev.		550	8.16	9x33x½	TL

CCJ Newscast

Continued from Page 35

over April and 4 per cent over May, 1948, according to statistics compiled by the Department of Research, American Trucking Associations, Inc.

Comparable reports received by ATA from 323 carriers in 43 states showed these carriers transported an aggregate of 3,043,781 tons in May, as against 3,040,830 tons in April and 3,032,176 tons in May 1948. Approximately 79 per cent of all tonnage transported in the month was hauled by carriers of general freight. The volume in this category decreased 7 per cent below April and 1.6 per cent below May, 1948.

HARLAND E. BOYD DIES

Harland E. Boyd, regional business manager for *Automotive Industries* and *Motor Age* in Cleveland, died July 8 at the age of 62. Mr. Boyd had been associated with the Chilton Co. since Sept. 1, 1915.

SIGNALS PROVE DEFENSE

An Indiana court has held that operation of directional signals can be offered as evidence in defense of a damage suit resulting from an accident. The Putnam County Farm Bureau was defendant in an action for $7,500 after a passenger car crashed into one of its trucks as it was making a lefthand turn into a farm driveway. The driver did not give a manual signal but relied on the signal device which was proved to be in operation at the time. The suit was dismissed.

RHODE ISLAND ROADEO

The Second Annual Truck Roadeo of the Rhode Island Truck Owners Association will be held at Rocky Point Park, Warwick, Sept. 10, 1949. State champions in both the tractor semi-trailer and straight truck classes will be selected and will compete for the National Titles at the A.T.A. National Truck Roadeo in the Boston Garden in October.

Sterling Adds Light Tractor

Sterling Motors Corp., Milwaukee, Wis., announces a new lightweight tractor series for highway hauling. Low chassis weight, improved performance, and maximum maneuverability are the features of the new tractor. It is available with either gasoline or diesel engines, in 143 in. wheelbase

INDUSTRIAL NOTES

International Harvester Co. has just announced completion of contract-letting for construction of a wholesale parts depot, costing approximately $1,000,000, in South Memphis, Tenn.

Main bearings are now offered in set boxes by **Federal-Mogul Service,** Detroit, Mich. Bearings are cataloged by set numbers and boxed in sets under this number. This provides protection and correct part identification right up until the bearing is installed. There can be no chance of dirt particles reaching the bearing, nor can it be improperly identified.

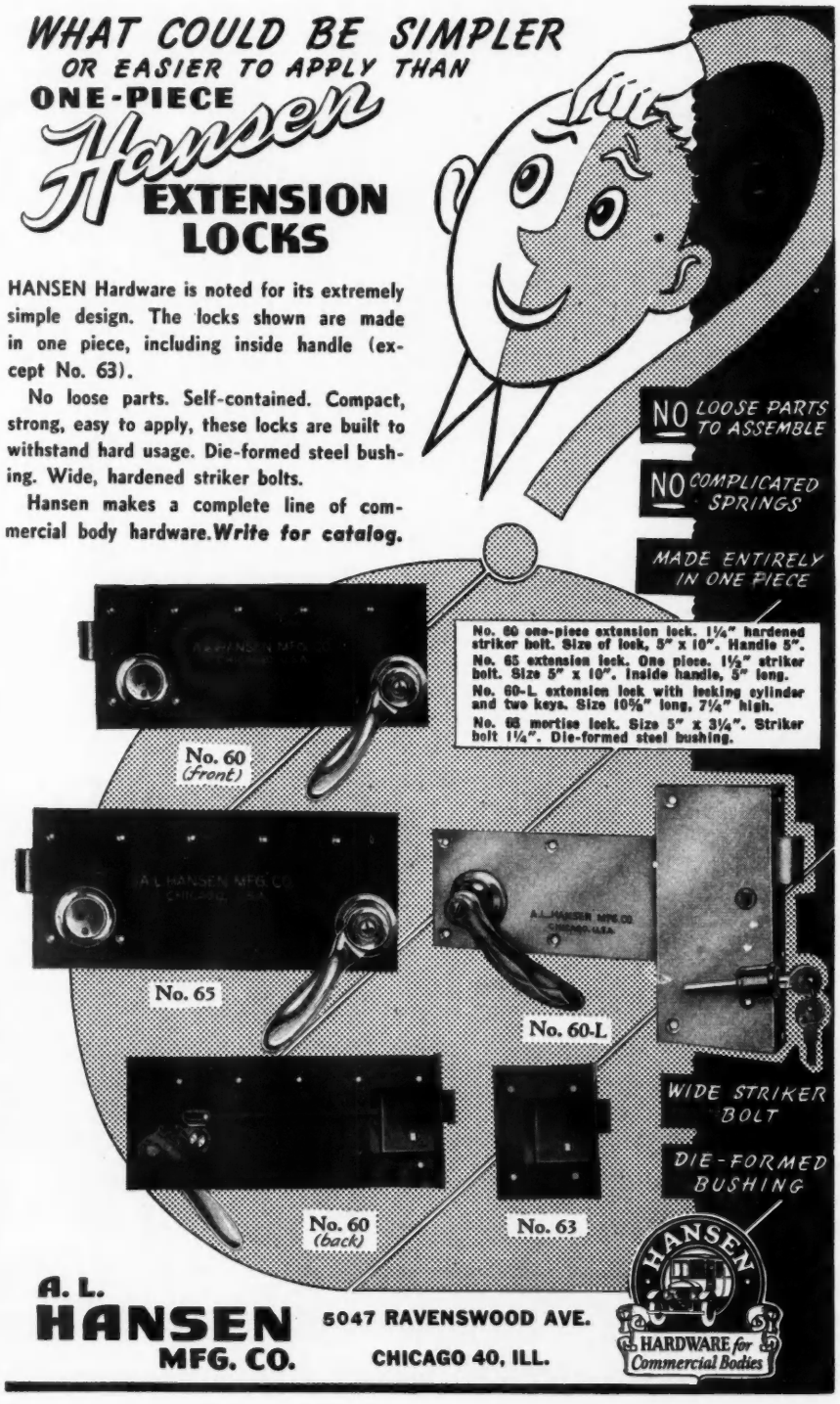
A weekly subscription-free news letter called *Hart Parts News* for body builders is being published by **Hart Pressed Steel Corp.,** fabricator of truck and bus body components, Elkhart, Ind.

Consolidation of the tire and tube manufacturing facilities of the **Pennsylvania Rubber Co.,** Jeannette, Penna., with those of the **Mansfield Tire & Rubber Co.,** has been announced.

United States Rubber Co. has reduced truck and bus tire prices 5 per cent. Truck and bus inner tubes are cut approximately 7½ per cent.

Truck tire price cuts averaging 5 per cent., and reductions in truck inner tube

(TURN TO PAGE 108, PLEASE)


WHAT COULD BE SIMPLER
OR EASIER TO APPLY THAN
ONE-PIECE
Hansen
EXTENSION
LOCKS
HANSEN Hardware is noted for its extremely simple design. The locks shown are made in one piece, including inside handle (except No. 63).
No loose parts. Self-contained. Compact, strong, easy to apply, these locks are built to withstand hard usage. Die-formed steel bushing. Wide, hardened striker bolts.
Hansen makes a complete line of commercial body hardware. Write for catalog.
NO LOOSE PARTS TO ASSEMBLE
NO COMPLICATED SPRINGS
MADE ENTIRELY IN ONE PIECE
No. 60 one-piece extension lock. 1¼" hardened striker bolt. Size of lock, 5" x 10". Handle 5".
No. 65 extension lock. One piece. 1½" striker bolt. Size 5" x 10". Inside handle, 5" long.
No. 60-L extension lock with locking cylinder and two keys. Size 10⅝" long, 7¼" high.
No. 63 mortise lock. Size 5" x 3¼". Striker bolt 1¼". Die-formed steel bushing.
No. 60 (front)
No. 65
No. 60-L
No. 60 (back)
No. 63
WIDE STRIKER BOLT
DIE-FORMED BUSHING
HANSEN
HARDWARE for Commercial Bodies
A. L. HANSEN MFG. CO.
5047 RAVENSWOOD AVE.
CHICAGO 40, ILL.

New Truck Registrations by Makes by States*

STATE		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Ken-worth	Mack	Pon-tiac	Reo	Ster-ling	Stude-baker	White	Willys	All Others	Total
Alabama	May			755		5	241	1	263		173	84		5		1		89	7	59	2	1,486
	5 Mos.	1		3583	11	8	948	8	1335		750	545		29	1	19		483	47	330	23	8,121
Arizona	May			189		1	50		124		41	31		1		2		47	3	23	3	515
	5 Mos.	1		768	3	8	246	2	462	2	154	136	2	3		16	2	182	10	111	23	2,151
Arkansas	May			656	4		148		230		143	52		1		1		106	4	46	6	1,396
	5 Mos.	2		4343	35		1031	1	2046	1	898	636		7		64		667	25	561	23	10,340
California	May	9	1	2099	25	60	625	7	934	1	450	351	9	35	2	28	4	424	29	137	31	5,281
	5 Mos.	46	18	8508	97	215	2868	16	3471	5	2191	1542	47	88	2	85	25	1740	175	365	122	21,908
Colorado	May	1		361	2		113	3	115		73	75		1	1			35		32	3	816
	5 Mos.	1		1816	34	6	649	8	797		448	495		2	1	10		286	18	293	9	4,871
Connecticut	May	2	6	226	5	14	74	7	158	2	55	87		16		3		44	2	27	2	728
	5 Mos.	22	14	951	31	37	339	15	498	3	227	324		62		17		183	10	117	17	2,867
Delaware	May			120	1		32		73		16	36			1	1		13	2		1	295
	5 Mos.	2	3	487	10	1	152		270		94	141		2	2	3		51	12	20	4	1,234
Dist. of Columbia	May			68	1	10	26		48		12	14		1	1	2		6		6	1	186
	5 Mos.	24	2	344	7	26	146	14	273		80	101		17	3	10		28	18	29	7	11,128
Florida	May			778	9	4	232	3	365		127	112		11		5		120	11	58	5	1,840
	5 Mos.	1		2670	55	26	841	8	1244		485	571		67		33		401	55	326	28	6,811
Georgia	May			1557	11		403	5	851		256	274		13	25	16		244	15	121	2	3,793
	5 Mos.	2	1	4830	74	1	1515	15	2989		912	1217		88	27	97		807	94	313	313	13,294
Idaho	May			222	3		77	2	112	4	96	82	2	2		1		74	2	50	1	720
	5 Mos.	1		782	28		282	3	375	8	275	303	26	7		13		280	6	248	18	2,883
Illinois	May	5	2	1790	31	24	605	2	867		328	515		4	2	25		239	66	84	25	4,614
	5 Mos.	49	5	7706	261	120	2639	32	3687	13	1443	2767		75	8	160	2	1179	336	670	90	21,242
Indiana	May	3		643	11	10	233	2	348		199	266		33		12		139	24	62	6	1,891
	5 Mos.	8	3	2842	49	66	1015	13	1501		816	1242	1	53	3	56		782	133	341	45	8,980
Iowa	May			840	14	3	252	1	301	5	146	163				7		163	7	53	8	1,963
	5 Mos.	3		3852	84	20	1277	5	1704	9	614	1177	1	26	6	37		637	29	421	41	9,943
Kansas	May			1211	7		321		488		271	278		1	4	9		208	10	64	5	2,877
	5 Mos.		1	3832	48	13	1067	19	1581		771	1033		3	8	43		649	29	278	25	9,400
Kentucky	May		1	663	7	1	195	3	323		139	142		3	2	1		69	5	157	5	1,710
	5 Mos.	2	1	3113	50	16	886	11	1544	1	687	739		21	2	27		397	48	841	21	8,407
Louisiana	May			578	13		187		337	1	156	100		7		7		114	10	46	4	1,560
	5 Mos.	2		2602	51	9	833	3	1610	1	628	591		23	1	19		504	37	253	33	7,208
Maine	May			164			59	1	68		63	47		3	2	3		26		11	3	438
	5 Mos.	4	8	992	3	5	287	5	489		297	303		26	2	34	1	163	23	113	10	2,786
Maryland	May	3	2	320	5	9	135	1	194		69	79		8	1	6		34	11	18	3	886
	5 Mos.	23	23	1611	21	33	637	16	790		285	406		56	2	26		172	55	124	21	4,301
Massachusetts	May	4	15	343	5	10	201	2	200		78	110		24	1	6	4	67	12	12	1	1,086
	5 Mos.	59	45	1681	28	60	767	7	1070	4	353	541		102	2	38	17	313	100	138	13	5,338
Michigan	May			1165	9	28	311	5	623		283	147		8	2	9		130	28	56	16	2,820
	5 Mos.	17	3	5597	54	94	1657	33	2830		1128	917		56	5	48		649	91	358	75	13,612
Minnesota	May	4		919	4	8	260	1	454		170	206		10		1		192	7	53	11	2,300
	5 Mos.	44		3334	45	29	1037	11	1717	4	715	1158	5	35	8	10		771	36	250	42	9,251
Mississippi	May	1		707	6		191		292		230	97		3		1		92	3	45	2	1,670
	5 Mos.	1		3276	25		904	1	1298		790	520		16		16		384	16	357	15	7,618
Missouri	May			1136	6	19	328		453		217	214		3	1	14		132	88	51	1	2,643
	5 Mos.	5	1	4781	36	46	1406	1	1842		899	973		30	2	64		553	134	434	25	11,232
Montana	May	5		239	10	1	90	3	158	2	99	65	3	1		3		57	4	68	10	818
	5 Mos.	5		1310	51	2	426	10	664	7	436	470	9	2	1	30		300	11	496	16	4,248
Nebraska	May			587	30		149	1	289		156	180				3		135	6	71	6	1,613
	5 Mos.		1	2572	153	2	772	7	1229	5	580	926	9	9	2	14		530	36	571	35	7,455
Nevada	May	1		76		1	24		33		22	26		1				27		16	1	228
	5 Mos.	1		227	2	1	81		134		73	56		1		3		88		56	2	723
New Hampshire	May			114	3	1	46		63		32	24		8	1			10	2	8		312
	5 Mos.	3	5	589	14	9	206	1	388		139	179		31	1	9	1	65	7	76	4	1,729
New Jersey	May	2	8	848	26	6	171	3	423	4	159	196		25	10	3	1	69	24	65	16	1,857
	5 Mos.	58	77	2966	75	68	1070	34	1556	9	853	939	1	160	11	39	2	377	125	381	60	8,881
New Mexico	May			333	5		118		102		79	58				10		49	5	17	1	777
	5 Mos.	1		1092	20	2	354	1	391		266	196		6		11		182	14	74	24	2,634
New York	May	33	52	1244	42	54	684	33	715	4	356	471		87	7	51	1	175	65	133	22	4,230
	5 Mos.	201	293	5976	263	169	3404	94	3359	31	1861	2329		517	13	222	4	998	389	840	185	21,148
North Carolina	May	1		876	2	1	213	2	450		105	104		17		11		100	14	58	14	1,969
	5 Mos.	8		4079	21	11	949	6	1920		511	791		99		41	2	518	70	416	69	9,511
North Dakota	May			285	4	1	75	2	181		58	106		1		1		68	2	30	2	816
	5 Mos.	6		960	36	3	282	8	634		226	510		2		4		234	3	176	8	3,092
Ohio	May	7		1244	26	38	447	31	616	1	200	242		13	7	11		177	56	70	14	3,200
	5 Mos.	40	9	6197	109	150	2299	77	2943	4	1017	1629		83	20	72		914	301	604	74	16,542
Oklahoma	May	4		834	1	5	249		384	1	220	197			4	3		120	8	85	2	2,117
	5 Mos.	6		3195	9	12	1003	2	1475	2	628	873		11	6	26		440	42	418	15	8,163
Oregon	May			470	6	8	225	3	258		134	143	4	7	3	9	1	61	5	61	24	1,422
	5 Mos.	9		1862	23	21	727	9	961	3	542	525	30	32	3	24	3	347	61	366	42	5,590
Pennsylvania	May	25	22	1342	38	11	572	9	846		386	371		80	1	21	6	202	57	104	16	4,109
	5 Mos.	85	124	5963	161	33	2780	36	3320	3	1547	1883		266	1	96	16	1132	331	728	100	18,606
Rhode Island	May	11	1	157	10	6	85		140		26	63		11	2	2		43	2	19	3	563
	5 Mos.	36	3	486	25	48	197		405		121	207		34	3	12	6	89	19	75	15	1,781
South Carolina	May			444	1		153	1	231		93	68		10		2		41	14	29	5	1,082
	5 Mos.	2		2000	11	4	533	1	870	1	359	364		64	1	12		215	41	176	11	4,665
South Dakota	May			252	6		98	1	166		54	151				1		59	1	44	3	836
	5 Mos.			939	69	1	340	5	536	9	213	562		2		7		228	4	287	25	3,227
Tennessee	May			801	4	3	249	5	329		218	145		12	1	9		112	14	54	5	1,961
	5 Mos.	3	4	5464	70	19	1529	43	1990		1426	1493		102	9	116		638	147	621	53	13,727
Texas	May	6	2	2675	15	18	942	1	1381		808	598	1	27		13		481	37	192	50	7,247
	5 Mos.	31	2	9631	59	58	3396	8	4660		2321	2125	4	69	1	61		1552	180	1258	257	25,573
Utah	May			156	9		62		67		62	65	1	2	1	3		37	5	23		493
	5 Mos.			806	32	7	254	12	451	4	274	265	12	13	1	18	1	191	13	129	15	2,496
Vermont	May			95	3	1	46		59		33	33				4		23		30	1	328
	5 Mos.		7	569	10	5	210	8	335		182	307		6		15		206	7	187	12	2,066
Virginia	May	4	1	940	8	1	224	3	422		140	165		15		7		104	10	72	4	2,120
	5 Mos.	10	25	3602	42	11	957	10	1716		610	742		61		29		489	56	379	31	8,778
Washington	May			410	5	6	169	1	231		121	100	2	5		6		74	16	50	7	1,203
	5 Mos.	3		2059	29	33	765	10	1104		530	629	16	27	2	26	7	410	44	353	35	6,082
West Virginia	May			352	3		107	1	208	2	66	57		1		1		30	3	89	4	924
	5 Mos.	1		1433	20	7	638	8	820	16	308	321		17		21		189	30	461	20	4,310
Wisconsin	May			676	13	10	230	2	421	2	126	272		11	4	10		122	9	53	11	1,972
	5 Mos.	9		3101	71	51	985	17	1544	32	644	1234		47	4	66		573	75	334	89	8,876
Wyoming	May			124	2		31		54		24	25		2		1		26	1	30		320
	5 Mos.			592	33		196	1	301	2	101	181	1	6		9		113	3	180	6	1,725
Total	May, 1949	131	113	32882	451	378	10766	148	16446	29	7570	7487	22	529	86	346	17	5209	655	2742	368	86,375
Total	May, 1948	243	235	28276	1028	635	11110	468	28034	38	5916	12106	55	963		1135	38	3120	1111	7625	479	100,614
Total	5 Months, 1949	838	678	141951	2548	1566	47784	653	69129	179	31708	38116	164	2561	164	1918	89	23279	3546	17533	1953	386,357
Total	5 Months, 1948	1272	1480	128318	4715	2716	51330	2282	97157	378	28914	58630	178	4712		5331	220	20547	5371	31259	2590	447,400

* Data from R. L. Polk & Co. † Includes revision of deducting 31 trucks incorrectly assigned to D. of C.

"Our mechanics increase their efficiency and earning power with Snap-on Tools

says H. E. Bledsoe, Gen'l Mgr. of Parts and Service, City Auto Sales Company, Chicago, Illinois

"We welcome the call of our Snap-on service tool representative," says H. E. Bledsoe. "With his line of specially designed tools, our mechanics increase their efficiency and earning power . . . the result is a greater volume of customer service through our service department."

From coast to coast reports from top service managers like Mr. Bledsoe prove over and over again that Snap-on tools contribute to better workmanship, encourage speed and accuracy and promote happier service relationships.

With results like this — no wonder the Snap-on man is welcome. He keeps tool kits up to par with the right tool for every job and he delivers the tools direct to the mechanics, saving hours of tool shopping time.

Snap-on's direct-to-user tool service is available through 40 factory branches and almost 800 trained field representatives.

SNAP-ON TOOLS CORPORATION
8026-H 28th AVENUE, KENOSHA, WISCONSIN
International Division, Kenosha, Wis., U.S.A.

For 28 years, Snap-on's Direct-to-User Tool Service has proved to be "The Time-Saving Way to Buy Time-Saving Tools"

CCJ Newscast

Continued from Page 105

prices averaging 7½ per cent. have been announced by **Seiberling Rubber Co.**

Lee Tire & Rubber Co. of New York, Inc., announced a price reduction of 5 per cent on LEE DeLuxe truck and bus tires, and up to 7½ per cent on heavy duty truck and bus tubes.

The **Schauer Manufacturing Corporation** is the new name of the company formerly known as the Schauer Machine Company. Schauer manufactures a complete line of speed lathes for finishing operations, bench grinders, battery chargers, battery eliminators, rectifiers, and automotive test instruments.

Homestead Valve Mfg. Co., Coraopolis, Pa., makers of Hypressure Jenny steam cleaners, has embarked on a program which will place a factory trained service man within convenient reach of every Jenny owner. The company has purchased and equipped a special truck which carries materials and men to the jobber.

Virginia Welding Co., 114-116 Virginia St., East, Charleston, W. Va., has been appointed distributor for Hobart Brothers Co.

Mr. S. F. Baker, newly elected president and general manager of the re-organized **Detroit Automotive Products Corp.,** has announced appointment of Clark & Rickerd as advertising agency.

1949 Domestic Truck Factory Sales by Gross Vehicle Weight*

	5,000 lb. and Less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
January	31,918	25,697	10,537	15,085	4,047	2,708	1,290	91,282
February	32,799	25,543	10,504	13,708	2,855	1,839	1,292	88,540
March	39,769	28,082	12,029	14,599	2,364	1,654	1,428	99,925
April	40,568	25,068	9,578	11,771	1,926	1,590	1,307	91,808
May	33,805	19,931	7,876	9,062	2,294	1,327	1,223	75,518
Five Months—1949	178,859	124,321	50,524	64,225	13,486	9,118	6,540	447,073
Five Months—1948	186,131	90,106	67,647	98,204	29,707	19,326	9,053	508,174

*—Automobile Manufacturers Association.

Dealers Truck Equipment Co., Louisville, Ky., and Evansville, Inc., has been appointed distributor for Brown Aluminum Trailers.

Brown Trailers, Inc., Spokane, Wash., and Toledo, Ohio, recently announced the appointment of Carley Trailer & Equipment Co., College Park, Ga., as the Brown Distributor in that territory.

The **Lincoln and Lincoln Cosmopolitan** cars are being equipped with Hydra-matic transmission, offered as factory-installed optional equipment at extra cost on all Lincoln and Lincoln Cosmopolitans.

Ethyl Corp. has increased the required antiknock rating for all gasoline sold under the "Ethyl" trademark to 86 octane number by the Research test method.

The **Lincoln Electric Co.** has completed final arrangements with The Austin Co. of Cleveland for the immediate construction of an $8,500,000 plant to be erected in Euclid, Ohio.

Tuthill Spring Co., Chicago, is marketing helper spring sets for the Willys Jeep ½-ton panel delivery and the station wagon series 463-663.

1949 Truck Trailer Production*

	May	Five Months
Vans:		
Insulated and refrigerated	206	886
Furniture	35	183
All other closed top	1,066	4,811
Open top	119	646
Total Vans	1,426	6,426
Platforms:		
With cattle and stake racks	55	361
With grain bodies	26	101
All other	438	2,445
Total Platforms	519	2,907
Tanks:		
Petroleum, All other	167	882
Total Tanks	167	882
Pole and Logging:		
Single Axle	62	360
Tandem Axle	93	370
Total	155	730
Low-bed heavy haulers	157	626
Dump trailers	60	193
All other trailers	147	659
Total Complete Trailers	2,631	12,596
Trailer Chassis	121	623
Total Trailers and Chassis	2,752	13,219

* Industry Division, Bureau of the Census.

(TURN TO PAGE 180 PLEASE)

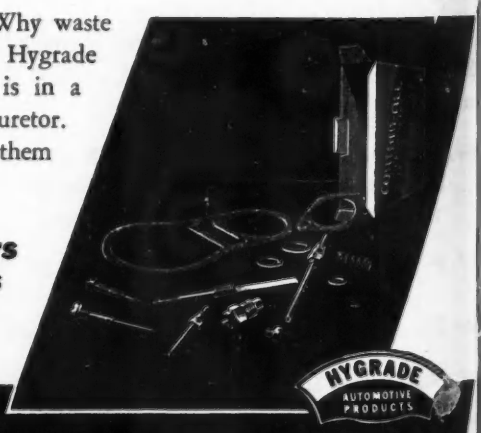
are your motors gas sots?

recondition with

HYGRADE

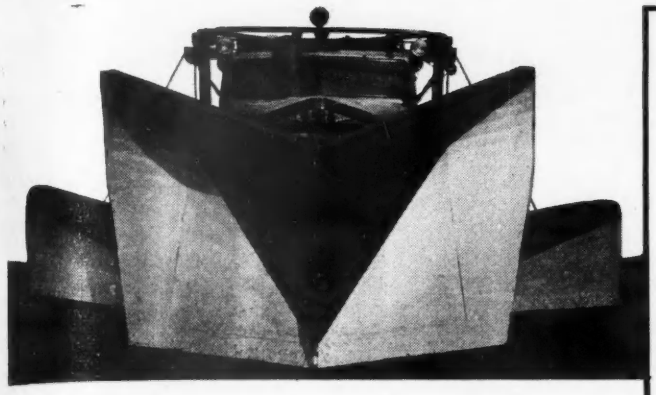
finger-tip carburetor kit

You know nothing steals gas like a faulty carburetor. Why waste fuel-dollars when you can rebuild old carburetors with Hygrade FINGER-TIP kits? Every precision-tooled part you need is in a neat box. And there's a kit for every popular type of carburetor. Try a FINGER-TIP kit on one vehicle, and you'll be using them on the fleet! Write us or see your jobber.



fuel pumps • fuel filters
fuel pump kits and parts
carburetor kits and parts
speedometer parts

HYGRADE PRODUCTS DIVISION • Standard Motor Products, Inc.
35-35 Thirty-Fifth Street, Long Island City 1, New York



Before you order any snow removal equipment—

Weigh these advantages of

WALTER SNOW FIGHTERS

SUPER TRACTION. Provided by exclusive Four-Point Positive Drive. Assures 100% traction in all four driving wheels. Eliminates wheel-spinning, stalling or slipping on snow and ice. Tremendous pushing force permits mounting bigger plows, removing greater volume of snow on each run.

SUPER POWER. Heavy duty engines, gasoline or diesel, from 150 to 250 hp., provide reserve power for severest conditions.

HIGH SPEEDS. Walter Snow Fighters clear at speeds of 20 to 30 mph., throw snow far to the side, leaving less to be re-handled. You clear more miles per hour, reduce traffic tieups, cut clearance costs.

RUGGED CONSTRUCTION. Every part is specially designed and constructed to withstand the severe strains imposed by snow removal.

HANDLE ANY CONDITIONS. Walter Snow Fighters are available in many models, with a great variety of equipment. They handle any conditions, from average snowfalls to deepest drifts; remove hard-packed snows and ice; spread sand and chemicals for ice control.

YEAR 'ROUND USEFULNESS. Walter Snow Fighters may be equipped with dump body, wrecker, auto-eductor or other equipment as desired, to give you a big, powerful, 100% traction truck for hauling, maintenance, construction or emergency work throughout the year.

WALTER SNOW FIGHTER equipped with One-Way Front Plow, Left Speed Wing, Center Scraper Blade and 10-ton capacity Sand and Chemical Spreader.

PLAN NOW! PLACE YOUR ORDERS EARLY!

Ask your Walter distributor for full details on Walter Snow Fighters —or write us for literature. Let us schedule your order now to assure early delivery.

WALTER MOTOR TRUCK CO. 1001-19 Irving Ave. Ridgewood 27, Queens, L. I., N. Y.

WALTER
4-POINT POSITIVE DRIVE
SNOW FIGHTERS

. . . THOMAS H. KEATING as general manager of the Chevrolet Motor Division, succeeding W. F. ARMSTRONG.

. . . R. E. MURBARGER as director of distribution of the Sealed Power Corp., Muskegon, Mich.

. . . PAUL N. SUTTON as sales training manager of Willys-Overland Motors.

. . . FRED J. KELLY as special account executive of the Thermoid Co.

. . . JAMES D. ABELES as assistant to RALPH R. LAYTE, president of Purolator Products, Inc., Newark.

. . . WARREN INGERSOL as assistant to the president of Lee Rubber & Tire Corp.

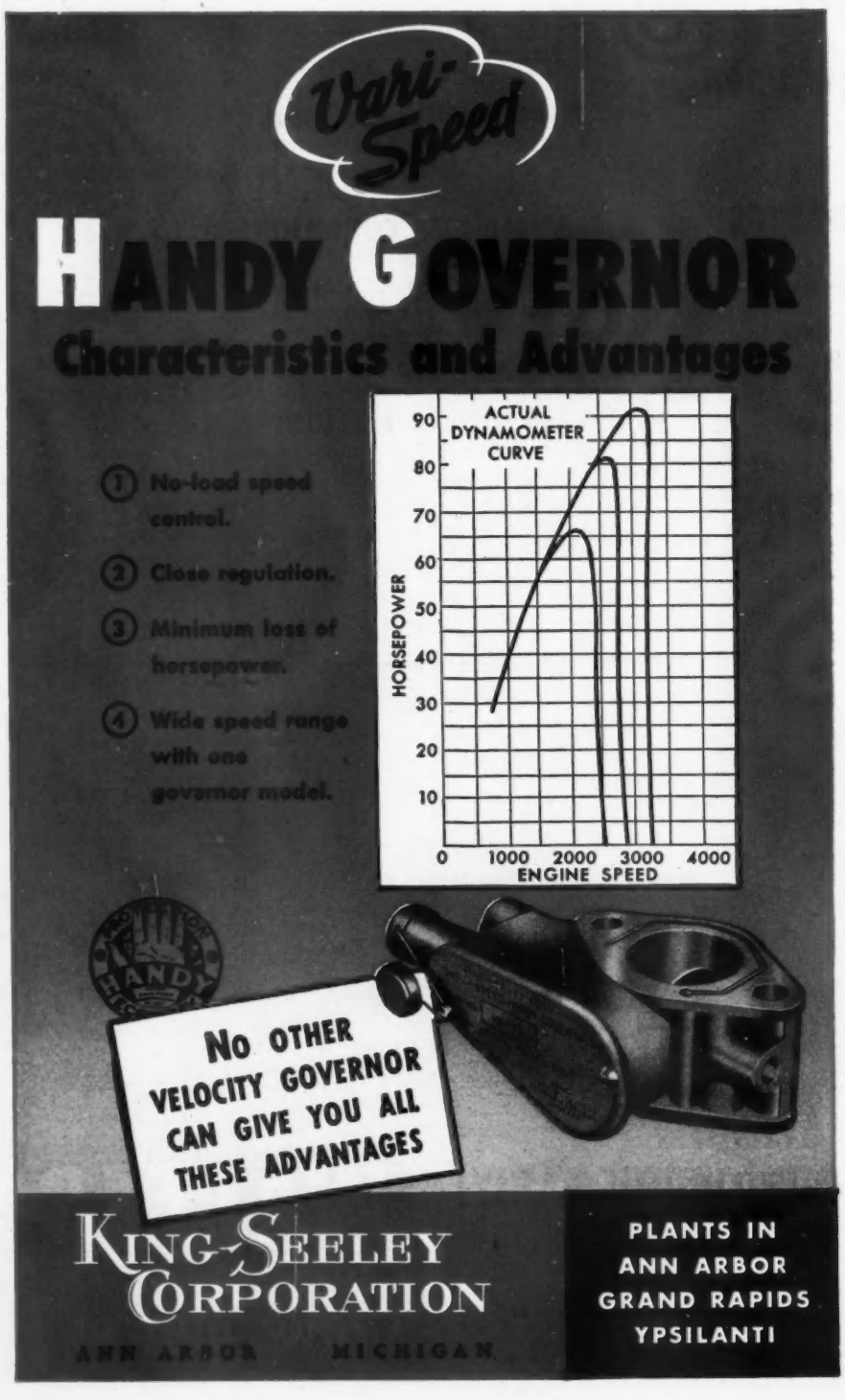
. . . W. R. "BILL" BRIGHTMIRE as sales manager for L. J. Miley Co., succeeding MARSHALL STEDER, who resigned.

. . . F. E. WARNES as director of sales promotion, Turco Products, Inc.

. . . PATRICK J. SPELLMAN as special representative for the AP Parts Corp. in Los Angeles and Southern California.

. . . DUNCAN H. BROWNE, JR., WILLIAM H. WITHAM, and JAMES A. ELLIOTT as field representatives of Willys-Overland Motors.

. . . RALPH L. SEBRELL as Radiator Specialty Co. representative in Ohio and eastern Indiana; ROY E. PAIGE, greater New York, Long Island and northern New Jersey representative.


Vari-Speed
HANDY GOVERNOR
Characteristics and Advantages
1 No-load speed control.
2 Close regulation.
3 Minimum loss of horsepower.
4 Wide speed range with one governor model.
ACTUAL DYNAMOMETER CURVE
HORSEPOWER
ENGINE SPEED
0 1000 2000 3000 4000
10 20 30 40 50 60 70 80 90
NO OTHER VELOCITY GOVERNOR CAN GIVE YOU ALL THESE ADVANTAGES
KING-SEELEY CORPORATION
ANN ARBOR MICHIGAN
PLANTS IN ANN ARBOR GRAND RAPIDS YPSILANTI

HENRY W. DODGE, who has joined Mack Trucks, Inc. as executive vice president with special responsibility for sales and advertising.

. . . PAUL L. GILLAN as chief engineer of the White Motor Co.

. . . EVERETT A. NICHOLS appointed factory sales representative for the Albany, N. Y., region, Federal Motor Truck Co.

. . . F. A. THOMAS appointed southwest area sales representative for the Shuler Axle Co.

. . . WILLIAM S. WOOLSEY as truck sales supervisor, Dodge Division, Chrysler Corp.

. . . Records PROVE it Gives 50% to 80% Longer Wear . . . and Other Savings EVEN BIGGER!

Once You Know the Facts You Will *INSIST* on These Big *SAVINGS!*

If YOU are the man who is most concerned about operating costs—and the resulting *net profit*—in any Truck or Bus operation, just read the statements of well-known Fleet Operators which appear at the bottom of these two pages!

In these *signed* statements, *practical* men who *really know* about actual operating *costs* and *savings*—Fleet Superintendents, Maintenance Managers, Chief Mechanics, Shop Foremen and General Managers of some of the largest and most profitably operated Fleets all over the U. S.—these down-to-the-ground realists tell you two *important things*.

From their own carefully kept records they say—and say in *writing*—that the one belt *specially engineered* for Trucks and Buses, the GATES TRUCK BELT, gives them fully 50% to 80% longer wear than any other belt they have ever used.

This alone represents a very substantial saving in belt costs—yet they tell you of another saving that is even bigger than this and far *more important* in increasing your net profits. This is the saving that Gates Truck Belts give you by *reducing road delays*—*costly* road delays that throw trucks and buses off schedule, making them *idle*, eating right into your profits.

Net operating time is, of course, the *only* source of profits you have—and you know that the increasing of your net operating time is the one thing that makes the biggest possible contribution to your net profits.

In view of the proved gains in operating time the Gates Truck Belt is giving other successful operators—in addition to a substantial saving in belt costs—we believe that, *starting TODAY*, you will want to *insist* that you have Gates Truck Belts on YOUR Trucks and Buses.

THE GATES RUBBER COMPANY
Denver, U. S. A.
World's Largest Makers of V-Belts

Gates Jobbers in Every City Can Supply You Promptly

STOPS COSTLY DELAYS

Tacoma Transit Company
TACOMA, WASH.
"On our 125 Twin Coaches, your specially engineered Truck Belts have given us from 60% to 80% longer wear, and have eliminated costly breakdowns on runs."
A. W. Macemon,
Gen'l Foreman

COSTS CUT 75% and More

Walkup Drayage & Warehouse Company
SAN FRANCISCO
"Gates Truck Belts are giving us 75% longer service than any used before—and even this big saving is small compared with the elimination of fan belt failures on the road."
D. C. Dickinson, Supt.

FAR THE BEST

East Texas Motor Freight Lines
DALLAS, TEXAS
"After 4 years of buying belts for one of the largest fleets in the southwest, I am convinced that your special Truck Belt is by far the best on the American Market."
G. H. Jones,
Purchasing Agent

NO MORE ROAD TROUBLE

Southern Bus Lines, Inc.
JACKSON, MISS.
"For the past 5 years, Gates Belts have given us much longer life, with reduced dollar cost, in addition to the time saved and road trouble eliminated."
Winfred A. Parramore,
Branch Purchasing Agent

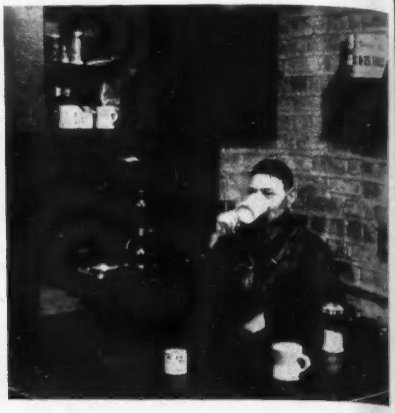
MUCH LESS LOST TIME

Ewing-Von Allmen Dairy Co.
LOUISVILLE, KY.
"Gates Truck Belts give us much lower cost per mile. But the big thing is that loss of time due to fan belt failures has been so greatly reduced."
H. H. Barnhard,
Garage Supt.

Gates
REG. U. S. PAT. OFF.
The Mark of SPECIALIZED Research

DRIVER SERVICE for Better Drivers

Consumer Co. garages make provision for driver comfort and convenience with eating and lounging facilities



Refreshments are provided by the company in neat rest room for drivers

WHEN THE management of Consumer Co. of Chicago decided, about two years ago, to develop a new system of decentralized garages for the more economical operation of the fleet of 150 heavy-duty trucks, it became a practical problem as to exactly what servicing facilities should be built into them.

Design for a model garage provided that about two-thirds of the interior floor-space of 50 by 35 ft. should be allotted to the set-up of three parallel stalls for the spotting of trucks needing adjustments or repairs. This would make special comforts and conveniences possible for the garage mechanics. This would include automatically controlled heat in the winter; and sun protection and air circulation in the summer. One of the three stalls was cut off, and the space thus saved—12 ft. by 35 ft.—was designed into a compact little room especially planned for the 10 to 20 company drivers assigned there. These conveniences of course are shared with the usual quota of two mechanics and one dispenser of gas and oil also assigned to the garage.

The new Bellwood and McCook garages in Chicago are trim in appearance, attractively painted, and the grounds well laid out for truck servicing and parking. When the driver arrives at the gas-dispensing pump to check in for the night, he aids in the servicing of his truck by supplying water and oil while the attendant is dispensing gas. He is allowed five minutes to park his truck and get to the front of the garage locker room to "clock out" for the day.

On entering the locker room, a driver first uses the convenient stand-up driver's desk at the front end by the window. Here he marks up his "daily report" form and clocks out for the

Write for Your FREE COPY

Learn what characteristics of a coil are needed for top motor performance, the significance of coil polarity, why an engine skips at slow speed and many other tips on Ignition Service.

The famous IC-55 Current Ballast, ECHLIN COIL not alone assures smooth motor performance, but with its installation you also get easier starting, reduced ignition repairs and maximum gasoline economy on every fleet vehicle. Ask your NAPA Jobber about this springboard to *improved ignition* today.

NAPA

ECHLIN Ignition

A PRODUCT OF ECHLIN

CONTACTS
COILS • CONDENSERS
& OTHER AUTOMOTIVE
ELECTRICAL PARTS

ECHLIN MANUFACTURING COMPANY
234 EAST STREET • NEW HAVEN 5, CONN.

Stand up driver desk is used to mark up the daily report and clock out

day. He also may check, on a "faulty condition" card, any of the 17 different "what's wrong items" as to the mechanical operation of his truck.

The large bulletin board at this end of the room emphasized Automotive Manager Husson's theory that the value of a bulletin board is directly in proportion to its readability and its interesting appearance. The board is illuminated from the top by a long, shaded neon light. The back surface of the board is soft celotex material which will easily take and hold thumb tacks. Material on the board is kept eye catching by new newspaper clippings, news pictures, snappy safety slogans, and important company notices.

The willingness of drivers to observe the inside "neatness rule" is illustrated by the practice at one garage, where the drivers agreed among themselves to a fine of five cents for anybody caught dropping a cigarette stub on the floor instead of in the container; and the cash accumulation is to apply on the purchase of a locker room radio.

Twenty-five metal lockers extend nearly the full length of the partition wall which separates the locker room from the remainder of the garage building. There are additional lockers at the end of the room; and at the far inside corner is a curtained hot-and-cold shower bath.

Along the side of the room is an electric cold water fountain; an electric hot-water heater; and a three-position washing trough. Just above the washing place is a specially designed and well-lighted six-foot wall mirror, with an adjacent plug-in for the use of an electric razor. Toilet facilities are also located here.

The extreme rear corner of the room at the outward side is given over to refreshment facilities. These include a coffee table with benches, food storage and coffee-making cabinet. The company provides coffee for the men.

Small individual bags of coffee may be brewed quickly in the electric percolator. Sugar in small containers and small cans of condensed milk are free as well.

There are no scheduled company appropriations for these coffee makings. Funds are provided "as needed," in the form of allowances up to five dollars made two times a month for those among the decentralized garages from which operate the largest groups of drivers. In addition to these refreshments, there are often small-change collections among the drivers to supply doughnuts, etc.

JOBSERVATION

When you don't believe in yourself—that makes it unanimous.

SLASH

FLEET MAINTENANCE COSTS

Bennett Ticket Printer Fleetmeters, equipped with combined registers and ticket printers, deliver a printed receipt after each fuel delivery. This receipt provides an *accurate accounting of fuel dispensed*—protects against losses, eliminates errors!

Tickets or sales receipts are inserted in the printer and locked in by a turn of the crank. When fill is completed, another turn releases ticket. Two types of ticket printers are available—the "Accumulative" and the "Zero Start" systems. Four Fleetmeter models available—write for catalog.

Preventive tire maintenance systems *demand correct pressures to start with*, and Eco Tireflators, with their precision accuracy, provide *exactly* the tire pressures required.

Eco Tireflators offer proven accuracy through a full 5 to 110 pound service range, faster delivery for large truck tires and many other important design and construction features that save time, lengthen tire life and reduce on-the-road tire trouble! There's an Eco Tireflator model to meet every fleet shop requirement.

SERVICE STATION EQUIPMENT COMPANY

a JOHN WOOD Affiliate

MUSKEGON, MICHIGAN

THE MEN WHO

Roll 'em through the night . . .

STAKE THEIR LIVES AND CARGO SAFETY ON

ERIE WHEELS!

The men who roll snarling behemoths over hill and dale, night and day, to supply our marts of trade, are confident in the safety of Erie Wheels . . . Wheels that marshall great strength with malleable iron resiliency . . . Wheels whose turbine-like spokes cool the brake drums and dissipate heat the faster they roll . . . Wheels a sleeping country-side never sees, but depends upon, as they roll through the night.

You Can Specify . . .

Erie Wheels

ERIE MALLEABLE IRON COMPANY

ERIE • PA,

Bonus Incentive

Continued from Page 82

us with the lowest insurance rates of any of the large national carriers in the moving industry. Whereas the average industry premium for intransit insurance is $5 and up per $1,000, the Greyvan rate is $4.50 per $1,000.

In order to provide a clearer picture of how our incentive plan functions, it might be well to give a brief description of how the company, itself, operates. We directly serve a 38-state area as a common carrier of household goods, operating 140 tractor and trailer units in our fleet. Through agreement with another company in the Far West and Canada, we are able to provide service to all parts of the United States and to some points in Canada.

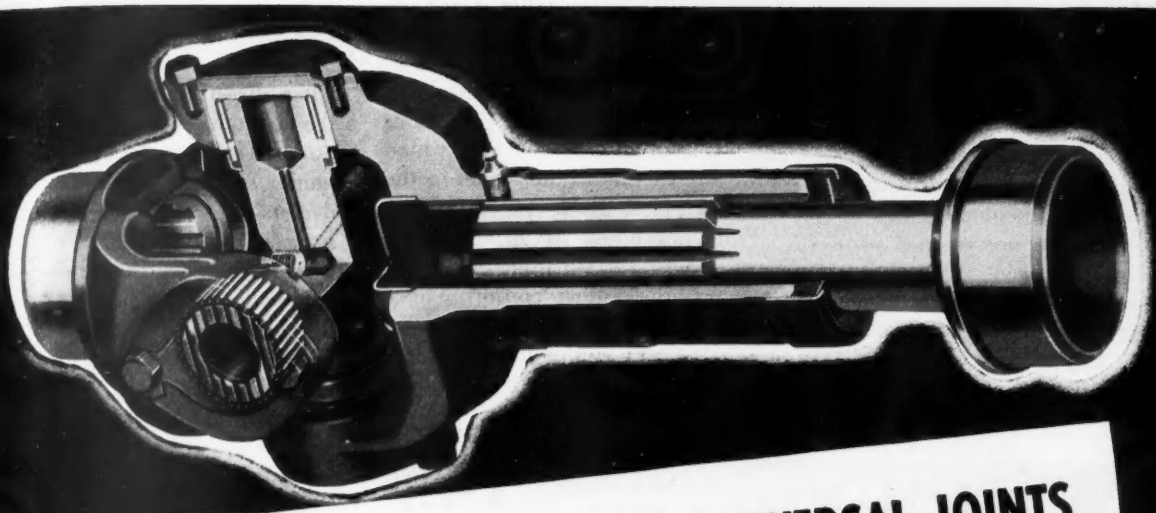
Our system is centralized at Chicago, which serves as the base for all drivers. Forty-nine company-owned branches are established in principal cities while over 300 agents are located in those smaller towns where it would not be practical for use to maintain branch offices.

All drivers selected for employment with the company are carefully screened, with preference shown to dependable family men. If an application appears favorable, the company undertakes a thorough investigation of the applicant and his background. A personal interview at the Chicago headquarters closes the contract between company and driver.

Operating, as we do, over irregular routes, any van in service may travel to any point in the United States. While we try to dispatch our drivers about the country, so that each man is not away from his home too long, nevertheless, some of our drivers may be on the road for months at a time. Thus, a driver dispatched from Chicago to New Orleans might pick up a load for Dallas, Tex., proceed from there to Birmingham, Ala., then take another load to Jacksonville, Fla., and so on for an indefinite period before returning to Chicago.

All dispatching is done by the central office, with drivers maintaining close communications with company headquarters in order to eliminate deadheading and unnecessary layovers. A teletype system connects the home office with all branches.

(TURN TO PAGE 118, PLEASE)



Spicer NEEDLE BEARING UNIVERSAL JOINTS

Offer Exclusive Features for Exceptional Services

Design—Rigid one piece forged steel yokes and journal cross carry full torque load and provide precision needle bearing alignment. Simple—sturdy—reliable.

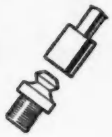
Material—Carefully heat-treated steel forgings to resist fatigue and shock loads. File-hard bearing surfaces to resist wear.

Accuracy—Precision fits and surface finishes assure vibrationless, trouble-free, dependable operation.

Flange Type

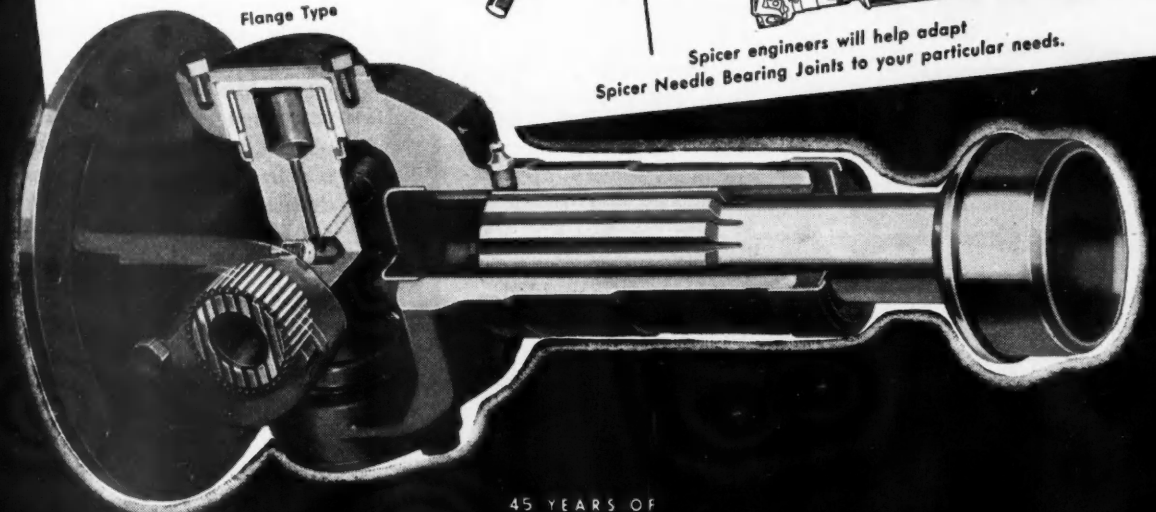
Balance—Spicer has unequalled facilities for maintaining very close limits of static and dynamic balance in all units.

Lubrication—After initial pressure lubrication, centrifugal action distributes reserve lubricant to bearing surfaces. Centrally located lubrication fittings allow refilling of lubricant reservoirs with shaft in installed position, without affecting original assembly or balance.



Types and Sizes—Every need in the automotive, industrial, and agricultural field is met by Spicer's broad range of designs and sizes.

Spicer engineers will help adapt Spicer Needle Bearing Joints to your particular needs.



SPICER MANUFACTURING
Division of Dana Corporation
TOLEDO 1, OHIO

45 YEARS OF
Spicer
SERVICE

TRANSMISSIONS • PASSENGER CAR AXLES
CLUTCHES • PARISH FRAMES • STAMPINGS
TORQUE CONVERTERS • UNIVERSAL JOINTS
SPICER "BROWN-LIPE" GEAR BOXES
RAILWAY GENERATOR DRIVES

Bonus Incentive

Continued from page 116

Each driver owns the complete tractor and trailer unit which he operates and maintains. The company has no garages of its own nor does it own any pieces of equipment, a factor that has assisted us in materially reducing the company's investment. The company's only maintenance responsibility is the painting of all units, something that is done about every 18 months through arrangements with painting concerns.

All drivers are independent businessmen operating under provisions of a "Truckman's Agreement," which is the contract that binds them to the company.

Units purchased by drivers must meet certain specifications. For instance, trailers must conform to a 32-ft. length, while engine displacement must be a minimum of 363 cu. in. This guarantees that units will be large and powerful enough to meet company hauling needs.

While the company itself does not enter directly into arrangements for the financing of units purchased by our drivers, we do use the company name wherever possible to assist drivers in securing best terms from financial institutions. We also assist drivers in securing the benefit of wholesale buying in the purchase of tires, parts, oil, grease, insurance and other items necessary in for-hire truck operation. In some instances, the resulting saving may be substantial for the driver.

We have 140 drivers operating as many units in our fleet. Each driver is required by his contract to take any load assigned to him by the central office, with no provision for seniority, selection of routes and other factors.

This is necessary, of course, to protect the company against delays which otherwise might accrue through differences as to whether or not a driver should take a certain load. We try to meet all reasonable requests of drivers concerning routing, but service to the customer is the paramount factor in job assignments.

The company performs all solicitation and sales, collections, accounting, and other such activities normal to any business concern. It holds all federal certificates and permits. Furthermore, it reimburses drivers for all vehicle licenses, taxes, permit and other fees required in the operation of a vehicle, with the exception of the initial vehicle licenses and taxes required by the driver's home state.

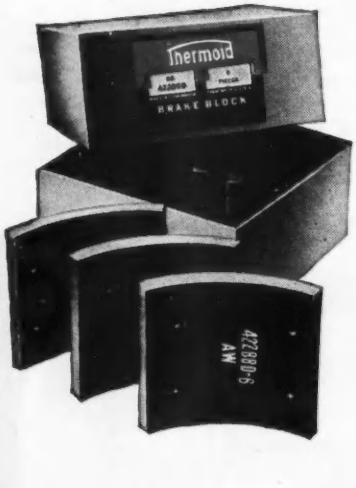
The incentive plan has been of benefit to both drivers and the company. Most men who do not have a van when accepted by Greyvan pay off the balance on their unit within the first 18 months. Some of our drivers had gross earnings exceeding $20,500 for the year ended Oct. 31, 1948, and many others exceeded $16,000 in the same period. Meanwhile, the company's operating ratio has averaged 93 per cent while the annual gross revenue has climbed from $2,287,000 in 1944 to $4,213,000 in 1948. Obviously both the company and our drivers have profited by our relationship.

Details of Bonus Plan

AFTER we settled upon the independent contractor method of (TURN TO PAGE 120, PLEASE)

Put Your Money on the Thermoid Line

Built for Heavy Duty Service



Thermoid Brake Blocks are made to give you reliable performance under ALL operating conditions, hot or cold, wet or dry—they are not a compromising adaptation. They last longer and reduce "downtime" maintenance costs.

For heavy duty applications requiring up to ½-inch thick braking materials, Thermoid CBB Sets are dual-friction, specially molded.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

It's not the container size that counts . . .

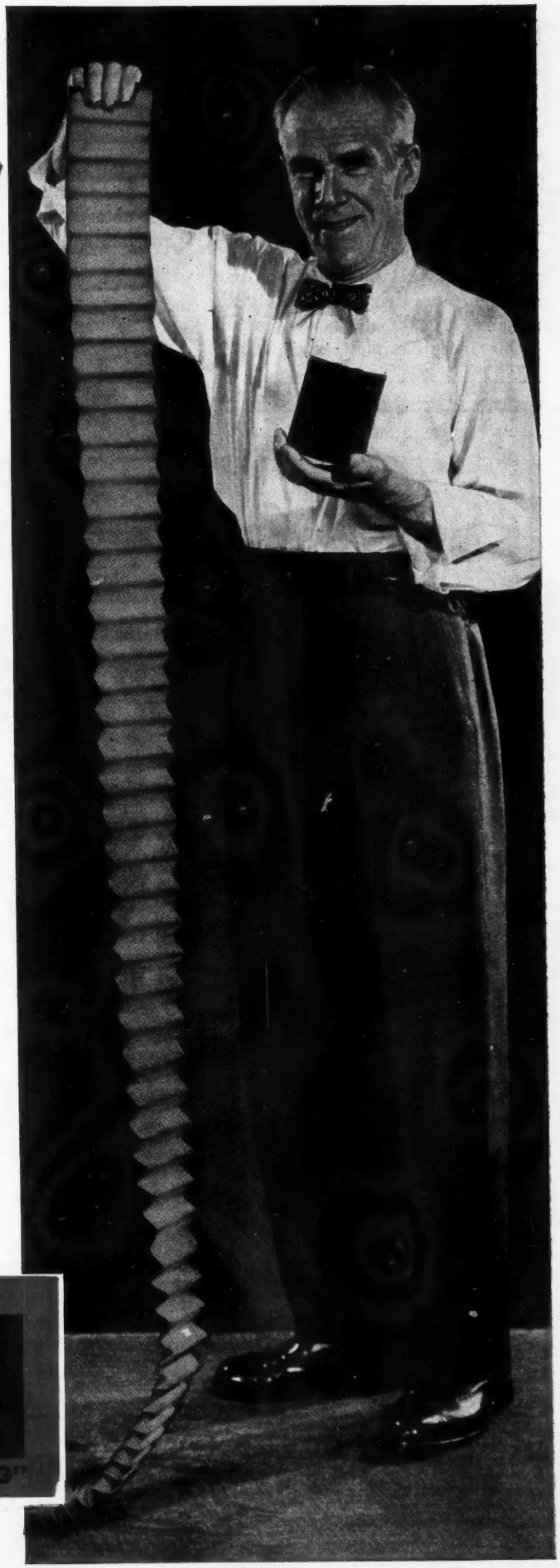
it's the filtering surface!

That's why the accordion element in Purolator's Micronic Oil Filter removes 290% more abrasives . . .

PERCENTAGES BY WHICH PUROLATOR MICRONIC ELEMENT EXCELLED COMPETITIVE TYPES

COMPETITOR	IN AVERAGE DIRT RETENTION PUROLATOR LED BY:
A	199%
B	220%
C	113%
D	547%
E	164%
F	619%
G	255%
H	339%
I	318%
J	193%
K	237%

AVERAGE PUROLATOR SUPERIORITY **290%**



Just look—this smallest automotive-type Purolator Micronic element . . . although no larger in container size . . . has 570 square inches of effective filtering surface as compared to 54 square inches in ordinary filters!

Too—Purolator engineers perfected this element so that it filters particles measured in microns (.000039 of an inch) . . . removes an average of 290% more abrasives as proved by the competitive test results shown in the above chart.

This means you get *faster*, more *complete* filtering of *all* the sludge and abrasives . . . *resulting in fewer engine repairs and less down-time.* And that's why it will pay you to let your near-by Purolator supplier equip your entire fleet with genuine Purolator Micronic Refills *now.* Remember—there's a Purolator Refill for practically every make of vehicle and oil filter.

PUROLATOR

MICRONIC OIL FILTER

"FIRST IN THE FIELD OF FILTERING"

PUROLATOR PRODUCTS INC.
Newark 2, New Jersey; and Windsor, Ontario, Canada

Bonus Incentive

Continued from page 118

operation as the best for our business, we studied means of guaranteeing top performance from drivers. We finally decided that an incentive plan would be a good way to promote peak efficiency. If the company is to expect above-average output from drivers, then those drivers must be given a chance to make above-average pay.

Our incentive plan gives drivers that chance with little exception.

The incentive plan we inaugurated provides for the payment of bonuses in three different classifications, with a fourth bonus obtainable if the driver makes himself eligible for the first three. This is the way we have broken down the classifications (with percentages figured from the gross revenue of the driver's loads):

Bonus	Basis of Payment	Per Cent
A	For satisfactory mechanical operation of unit	.5
B	For satisfactory service to customers	1.0
C	For personal appearance and correct mental attitudes	1.0
	Total	2.5

The first classification concerns the appearance of the driver's unit and the care he accords it. Bonus B is based on how the driver maintains schedules, handles shipments and generally comports himself in his dealings with customers. Bonus C is self-explanatory.

A driver may obtain any one or two combinations of the three bonuses, or all three. In the event that a driver qualifies for all three bonuses for three successive months, he becomes eligible for an additional .5 per cent bonus, boosting the total figure to 3 per cent. This extra .5 per cent will continue to be paid the driver just as long as he qualifies for the A, B, and C incentives.

In the event the driver fails to obtain these three bonuses in any month, he must again qualify for all of them for three successve months before the extra .5 per cent bonus again will be paid.

Determining Eligibility

THE success of any incentive plan depends largely upon the manner in which the eligibility of the employee or owner-operator driver is determined. We compute bonuses on a monthly basis from a "Truckman's Bonus File" on every driver.

A driver's fitness for the A and C bonus is based on reports we receive from branch offices and from the operating department of the headquarters office. Branch managers are told to report instances where drivers are lax with their own personal appearance, or with that of their units, or where drivers have shown an uncooperative attitude. Any adverse reports received are compiled in the "Truckman's Bonus File" of that driver. The file is kept by the operations department and determines individual driver eligibility.

Whenever any adverse reports are received, drivers are given an opportunity to answer them. The reports may be stricken from the records if a satisfactory explanation is offered. If not deleted, the reports become a part of the bonus file, and may form the basis for disqualifying a driver from either the A or C bonus.

In determining eligibility for the B bonus, Greyvan enlists the aid of its customers, feeling that they are the best ones to know if a driver's service has been satisfactory. Every-

(TURN TO PAGE 123, PLEASE)

THIS IS THE ONE FOR YOUR BIG TRUCKS!

2 qt. size (above) for large trucks; 1 gal. size for tank trucks, garages, terminals.

BIG TRUCKS, bought at big cost, need fire extinguishers that can do a big job. Highway authorities recommend larger extinguishers for today's greater hazards.

The 2 quart and 1 gallon PYRENE* Vaporizing Liquid Extinguishers have the fire-smothering *power* it takes to protect your heavy investment.

They'll handle almost any kind of fire, including flammable liquids. They're safe to use on electrical fires.

You can put them to work in seconds, because they operate on stored air pressure. Their combination nozzle is instantly adjustable for solid stream, fan-shaped spray, or temporary shut-off. Each one is equipped with pressure gauge and sight glass, to tell you at a glance that pressure and fluid are ready for action.

Both sizes are available with either wall or running-board bracket, and with or without built-in hand pump to renew air pressure. Both sizes give you superb fire protection, and the peace of mind that comes with knowing you have it.

Call in your PYRENE jobber today for a recheck of *your* extinguisher requirements.

*T. M. Reg. U. S. Pat. Off.

PYRENE MANUFACTURING COMPANY
589 Belmont Avenue Newark 8, N. J.
Affiliated with C-O-Two Fire Equipment Co.

Bonus Incentive

Continued from page 120

time a load is delivered within a territory covered by one of the company's 49 branch offices, the nearest branch office is asked to contact the shipper and have a Shipper's Report (see Fig. 1) filled out.

This report consists of a variety of questions aimed at determining what the customer thinks of the driver's performance and of Greyvan service. Properly answered, the report not only gives an insight into the kind of job the driver performed in handling a certain load, but also provides the company with a guide toward improving its service to other customers. Furthermore, the reports are an effective public relations weapon, since they show customers that Greyvan is interested in seeing that satisfactory service is afforded.

In the event a load is delivered to shippers outside the zones of Greyvan's branch offices, a second method is used to determine customer attitude toward service. Each customer is sent a personal letter under the signature of George O. Watson, Greyvan president, asking for comments on the service rendered. With the letter goes a convenient 3½ x 5½ in. card for comment and a stamped, return-addressed envelope.

So far, Greyvan has experienced a 60 per cent return on these cards, providing us with a good check on what our customers think of our drivers and the company. It might be expected that only customers with complained would be moved to answer our request for information. However, this is not the case.

Many of the customers who answer our query show astonishment that we even bother to obtain any information about a load already delivered. They seem anxious to tell us of any extra service rendered by drivers. This has resulted in many customers turning to us with repeat business where loads developed later.

When the cards and shipper's reports come into our office, they are funneled to the president's office for examination. In a service industry such as ours, we feel that it is important that the executive office be in close touch with customer response.

From the president's office, the cards and shippers' reports go to the public relations department for evaluation. Here any adverse reports concerning any driver are recorded. These adverse reports, if any, are then sent to the operations department for inclusion in the driver's "Truckman's Bonus File," and form the basis for determining the B bonus.

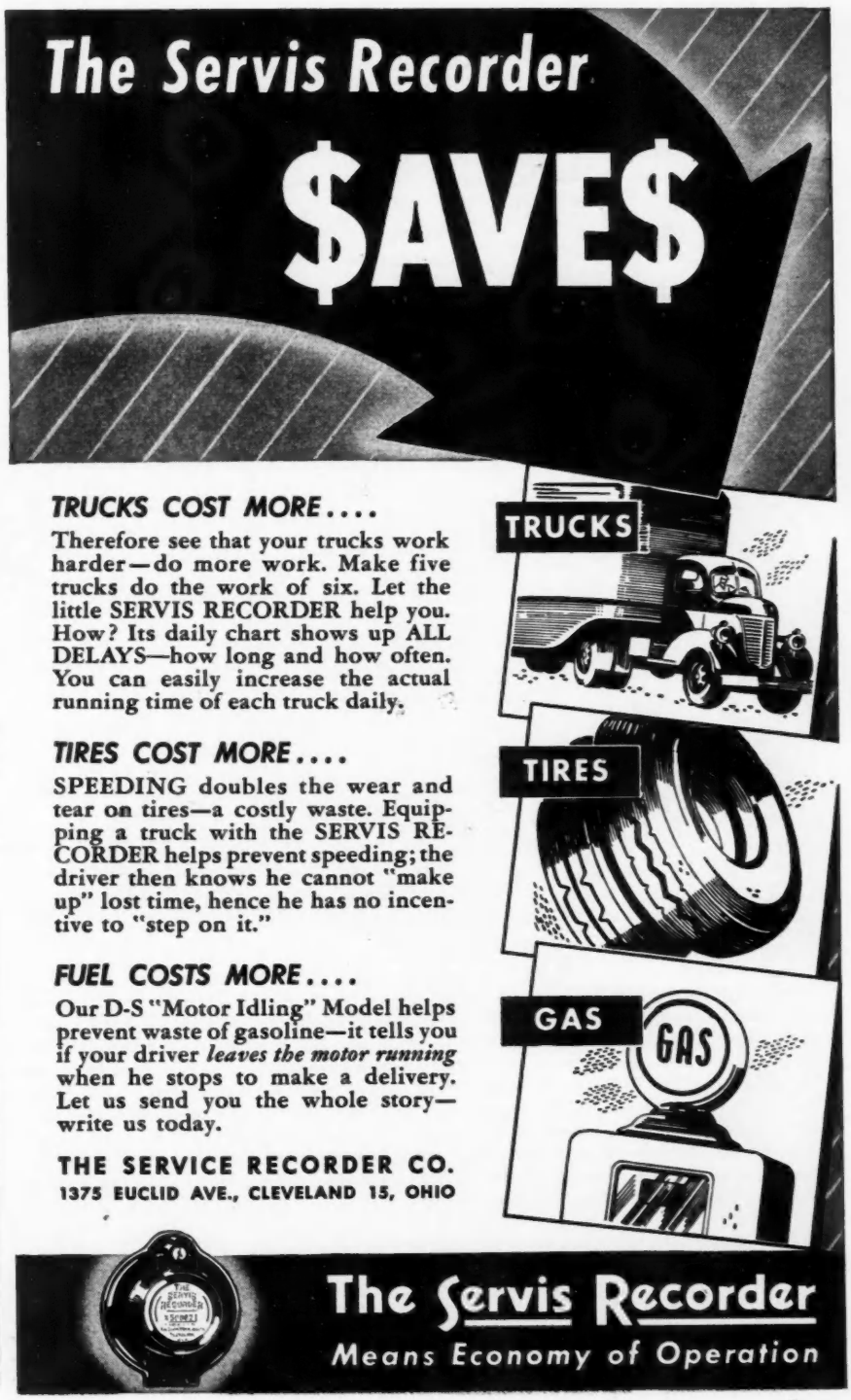
Once a month the operations department computes the bonus for drivers, passing this information to the cashier's office.

In addition to the incentive bonus, drivers after two years' service with the company are eligible for an annual bonus of 1 per cent of their gross revenue on loads hauled, provided the company's annual gross exceeds $3,000,000.

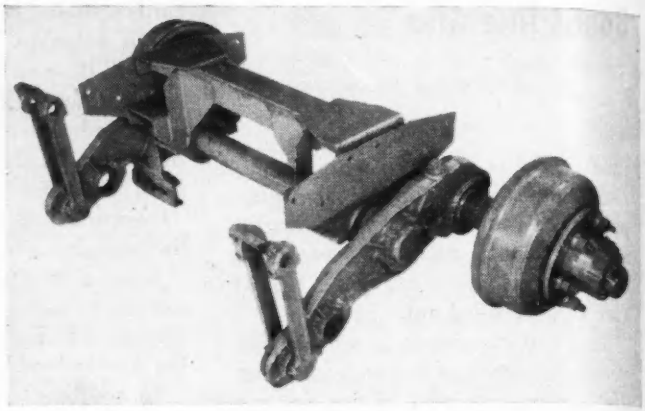
This summary of our operations has necessarily been brief. However, it should provide a basis for interpreting Greyvan's arrangements for driver-compensation.

END

(Please resume your reading on P. 83)


The Servis Recorder
AVE
TRUCKS COST MORE....
Therefore see that your trucks work harder—do more work. Make five trucks do the work of six. Let the little SERVIS RECORDER help you. How? Its daily chart shows up ALL DELAYS—how long and how often. You can easily increase the actual running time of each truck daily.
TRUCKS
TIRES COST MORE....
SPEEDING doubles the wear and tear on tires—a costly waste. Equipping a truck with the SERVIS RECORDER helps prevent speeding; the driver then knows he cannot "make up" lost time, hence he has no incentive to "step on it."
TIRES
FUEL COSTS MORE....
Our D-S "Motor Idling" Model helps prevent waste of gasoline—it tells you if your driver leaves the motor running when he stops to make a delivery. Let us send you the whole story—write us today.
GAS
GAS
THE SERVICE RECORDER CO.
1375 EUCLID AVE., CLEVELAND 15, OHIO
The Servis Recorder
Means Economy of Operation

Duaload
THIRD AXLE
Doubles Payload



New Truxmore third axle assembly designed for trucks with 8:25x20 tires

A NEW Duaload Third Axle for doubling the payload of two-axle trucks has been announced by the Truck Equipment Co., Inc. of Buffalo, N. Y.

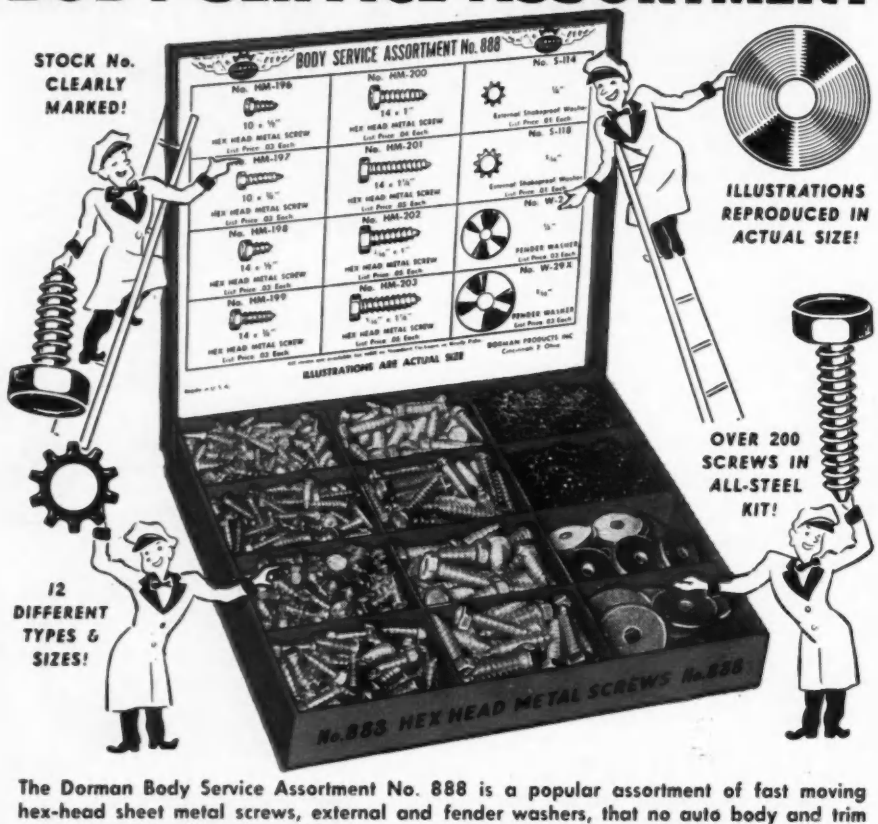
The new axle is essentially Truxmore without radius rods, gravity spring suspension, spring leaf cross member, cross shaft roller and spherical bearings.

In place of the radius rods, two heavy-duty Hotchkiss drive axle spring brackets and a long spline universal joint is furnished. Replacing the gravity spring suspension and cross shaft spherical bearings are two 5½ in. x 4 in. rubber bearings. A rugged box beam is used instead of the spring leaf cross member. Substituted for the two cross shaft roller bearings are two 3½ in. x 4 in. threaded bushings in the walking beams and threaded cross shaft ends.

The Duaload is furnished with matching wheels, brakes and track; glove fit frames, telescoping those on the truck, extending from well under the cab to end of the body; hydrovac booster kit with reserve tank and 1¾ in. compensator for all six brakes and one pair of complete drive axle springs with O and S bearings.

The load shifter permits either 50-50 or 60-40 load distribution. The spring leaf brake torque eliminates wheel hop. The sliding axle ball together with the walking beams permit up to 14 in. of wheel and axle compensation without load transfer. Large oil reservoirs in the walking beams provide automatic and positive lubrication of the axle sliding ball joints. Guide plates protect the frame against wear.

DORMAN No. 888
BODY SERVICE ASSORTMENT

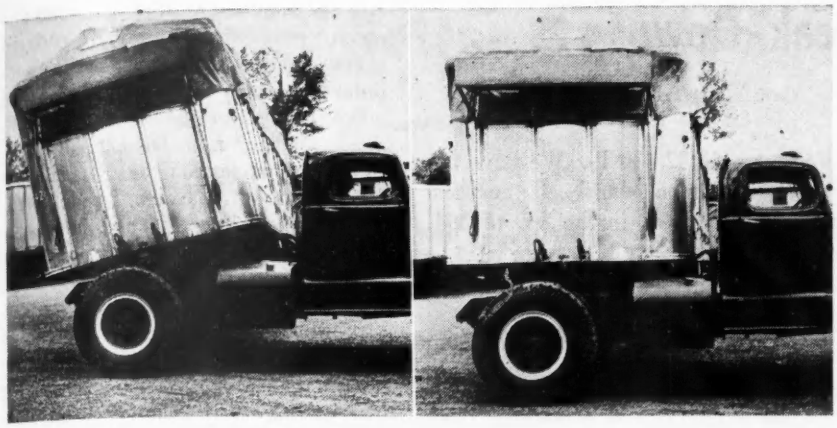

STOCK No. CLEARLY MARKED!
BODY SERVICE ASSORTMENT No. 888
ILLUSTRATIONS REPRODUCED IN ACTUAL SIZE!
OVER 200 SCREWS IN ALL-STEEL KIT!
12 DIFFERENT TYPES & SIZES!
No. 888 HEX HEAD METAL SCREWS No. 888

The Dorman Body Service Assortment No. 888 is a popular assortment of fast moving hex-head sheet metal screws, external and fender washers, that no auto body and trim shop, garage, or fleet shop will want to be without. There are over 200 hex-head screws of 8 different sizes and 4 sizes of external and fender washers in this new assortment. The attractive No. 888 is constructed of 28 gauge steel and measures 9" x 8" x 1¼". The interior is divided into 12 compartments to accommodate each individual size of screw and washer. When the assortment is open, a prominent diagram showing the location, size and stock number of each part contained is in clear view. Anyone can quickly identify the size and stock number of any of the metal screws or washers, as all illustrations on the diagram are reproduced in life-size. Refills for the No. 888 are now available in Ready-Paks and in Standard Packages. See your automotive wholesaler about both Dorman Body Service Assortments and Refills.

DORMAN PRODUCTS
DORMAN PRODUCTS Inc.
CINCINNATI, OHIO

JOBSERVATION

Let opportunity do the knocking.



The conventional fifth wheel, left, allows trailer tipping in a jacknife, while this hitch, right, provides for level rest on 4-point suspension

Holland SAFETY Fifth Wheel

THE Holland Hitch Co. is now in production on a new type of Holland-Apgar Fifth Wheel which is said to permit sharp swerves and turns and which eliminates tip-overs during sharp angle approaches to landing docks.

The new hitch accomplishes this by a 4-in. offset in the pivot of the fifth wheel, which in turn is mounted in a swiveling base plate, keeping the fifth wheel always parallel with the trailer axle. As the tractor turns, the center of gravity of the trailer load is shifted to the inside of the turn. The sharper the turn, the greater the offset of the load. This achieves the same general effect as the "banking" of a highway curve, and makes the truck trailer highly maneuverable.

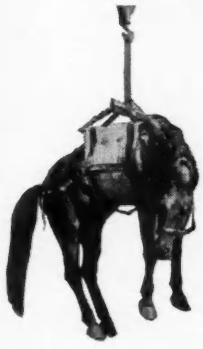
A further improvement is a constant 4-point suspension of the trailer load, rather than the 3-point suspension found in all present fifth wheels. This provides a better base for the load, just as a four-wheel cart is more stable than a tricycle. This, plus the movement of the center of gravity toward the inside of the curve, results in a remarkable increase in the stability of the trailer—and a corresponding increase in safety of operation. An anti-jackknifing stop built into the Holland-Apgar fifth wheel is another added safety feature.

In loading or unloading in confined areas, the rocking shaft or trunnion rod is parallel to the trailer axle at all times. This provides a constant, stable 4-point suspension, regardless of the position of tractor and trailer. The 4-point suspension prevents damage to the trailer or load through warping and leaning, as well by averting tip-over. See the September issue of CCJ, p. 69, for complete details.

Put Your Money on the

Thermoid Line

Built for Heavy Duty Service



Thermoid is the best name in fan belts. Thermoid's famous pre-stretching *prevents* stretch, slip, wear and fail, the four steps that, in ordinary fan belts, mean added maintenance costs. Thermoid fan belts always stay the correct size.

Insist on Thermoid Fan Belts because it's good business to buy the best! Matched sets are available for belt drive applications where needed.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

Dynamometer Cuts Break-Downs . . .

Continued from Page 67

is discovered and remedied by those concerned.

Our company is engaged in the interstate transportation of household goods, and such, throughout the United States and Canada. All vehicles are conventional sleeper cab tractors pulling single axle drop frame trailers. The gross vehicle weight seldom exceeds 32,000 lb. We have no diesel equipment, and all engines would be included in the 269 to 364 cu. in. category.

Test Procedure

A CHECKING and testing department consisting of four men on the first shift, two men on the second shift and one man on the third shift—all top-notch mechanics, interview drivers, check records, road test, write work orders, operate the dynamometer and make final approval checks of work done. On arrival in Indianapolis, each tractor is not put on the dynamometer for a condition analysis. Irregular dispatching schedules make it impossible to determine accurately arrivals or know how long the vehicle may stay in Indianapolis. For that reason, only tractors which are being worked in the shop are definitely scheduled for test on the dynamometer. About one out of every six tractors, however, becomes the exception to this. In the interview with the driver or by reason of recent road repair records a dynamometer test may be a necessity.

If the dynamometer is in use at such a time, a special effort is made to expedite or postpone that work and make way for the diagnosis. Tractors arriving in Indianapolis on which no work is apparently necessary, are eligible for a dynamometer test if they have gone more than 5000 miles since their last test. Such a test is made if the dynamometer is available while the vehicle is in Indianapolis. The use of our chassis dynamometer for diagnosis accounts for only a very small percentage of its use. That small percentage, however, is so vitally essential, I believe this alone would warrant its existence.

Every new tractor undergoes a 3½ hour break-in run, and a complete inspection and adjustment test. Each tractor in which a rebuilt engine is installed receives a 2-hour break-in, inspection and adjustment test. By reason of the fact that each completely rebuilt engine is given a 6-hour break-in run with appropriate adjustments on our engine dynamometer, the engine can forego some pre-test attention after installation in the chassis.

Each tractor which has undergone repairs in the nature of any sleeves, pistons, rings, bearings, timing gears, transmission or differential is subjected to a break-in period if applicable and appropriate test of such repairs.

Engine Break-In

THE break-in run is as follows:

Period	Percent of Max. Power	Road Speed	Time in Min.
1	25	25	60
2	50	35	60
3	75	48	60
4	100	48	10

Engines rebuilt in our shop are each run six hours in our engine dynamometer. On the chassis dynamometer the run in and test period on those engines is reduced to two hours, but in a similar manner. The same mechanics do not operate the two dynamometers. Engines we rebuild are run on the engine

(TURN TO PAGE 128, PLEASE)

TRAINOR
ALL STEEL HELPER SPRINGS
give you a stabilized, increased payload capacity. The Steel Springs are engineered for simple installation and all attaching parts made of spring steel without breakable castings. Trainor Springs are constructed to carry even greater loads than their specified capacity. One trip often pays for the cost . . . a small investment that pays big dividends.
TRAINOR BUILD-UP KITS, for use on trucks 1½ ton and up, reinforce original main and helper springs. Each leaf is properly arched to give the assembly maximum strength at minimum overall weight. Extra long U Bolts, Rebound Clips and Center Bolts are supplied for complete installation. Any mechanic can install Trainor Build-Up Kits quickly and easily with ordinary garage tools.
If your automotive wholesaler or spring specialist cannot supply you with Trainor Products, write for complete information. State year, make and model of truck to be serviced.
TRAINOR NATIONAL SPRING COMPANY
NEWCASTLE, INDIANA

For Quicker, Better Refinishing

Use Genuine FORD Refinishing Products

When your Ford cars and trucks need touch-up or complete refinishing, you can't beat Genuine Ford Refinishing Products—they're factory-matched for color—made *right* for Fords! You'll save time and money—and get a better, longer-lasting job!

Avoid "Matching" Problems with Genuine Ford Lacquer and Enamel

All Genuine Ford Refinishing Lacquers and Enamels are accurately compounded from the finest quality ingredients to duplicate the original finish colors as applied to Ford cars and trucks. No time-wasting trouble in matching patch colors for touch-up work, or in getting exactly the standard Ford color you want for complete refinishing. Tested and approved by the Ford Laboratory.

Genuine Ford Lacquer and Enamel is available in factory-matched colors, in pint, quart and gallon cans. The synthetic enamel finishes are made for air dry use. Same high quality and long life characteristics as found in original Ford finishes. Extra easy to apply.

Genuine Ford Color Patch comes in 3-oz. cans with handy applicator brush in cap. Also fits special new Touch-up Spray Gun for spraying direct from can. Ideal for small area retouching.

Other Genuine Ford Refinishing Products include special rubbing compounds . . . thinners . . . undercoats. Conveniently packaged for economy in use. Priced to save you money.

Keep your Fords' "showroom complexion" with Genuine Ford Refinishing Products. Order from your Ford Dealer or Ford Parts Distributor today!

Genuine FORD Parts...

Right for FORDS

FORD Division of FORD MOTOR COMPANY

Dynamometer . . .

Continued from Page 126

dynamometer using break-in oil. That oil is drained, inspected and regular engine oil is put in the engine just prior to its removal from the stand. The engine and chassis dynamometer test amounts to a good cross check on adjustments and performance. Because of the extensive check of the engine on the engine dynamometer, the chassis dynamometer tests of engines we have rebuilt are probably more of an overall vehicle test.

A chassis dynamometer is limited to tests and observations of definite varieties. Practically all of our vehicles are road tested with their trailers. Brakes and steering are the chief items of concern on these tests, but the reactions of the vehicle in general with supplementary information under whatever operating conditions we can provide is observed.

The chassis dynamometer will duplicate road conditions relative to grades or more accurately to total rolling resistance. Variations of this can duplicate basic operating points consisting of low or high speed operation at full or part throttle. Acceleration from low to high speed, and vice versa, can be accurately observed. Control of these factors with the vehicle in a position for careful observation are foremost of the advantages of the chassis dynamometer. Duplication of factors normally affecting the cooling systems of both the oil and water is not possible, but when necessary, auxiliary means can be used to keep them within operating limits.

A dynamometer itself will not make repairs. It is just another tool in the category of "test equipment" at the disposal of the mechanic. It does not eliminate, but it does minimize road testing.

END

(Please resume your reading on P. 68)

See What's Coming!

TWO *NEW* ARROW MIRRORS FOR TRUCKS AND BUSES

Greater visibility for drivers—greater protection for vehicles and payloads! The new Arrow mirror No. A607, shown here, has a diminishing head, with dioptrical, convex lens for sharper, wider vision. Ball-stud offset mounting. The telescopic bracket, for mounting on a fender, extends up to 14½". Overall height complete 19", with 5½" diameter head. Baked-on black enamel finish.

New rectangular mirror head, No. A605. Can be bought separately or with any of the various brackets and shafts that are available in the Arrow line. Rubber-mounted lens. Measures 4⅜" x 8½". Ball-stud offset mounting. Finished in baked-on black enamel.

Arrow, one of the oldest names in the industry, is famous for quality. See your jobber salesman today for Arrow mirrors and other dependable Arrow equipment—mirrors, reflectors, flares, directional signals, head and tail lights.

safety after dark

ARROW

ARROW SAFETY DEVICE COMPANY • MOUNT HOLLY, NEW JERSEY

Detroit Dispatch

Continued from Page 27

begun in 1932 as a "temporary emergency" tax and has risen steadily since that time both in rates and total revenue.

IHC Engine Slated for Fall

It now appears that the long deferred model change on International trucks may come early in November. Originally expected in June, the date has been set back apparently because tests being conducted by the company showed that more time was required to bring the specifications up to the rigid standards set by the engineering department. Although changes are reported to be extensive, it is not believed at all likely that a new V-8 engine the company has under development will be included in the forthcoming new models.

New Overhead Valve Engine

One of the Big Three has under development a new overhead valve six-cylinder in-line engine that is reported to be giving outstanding results under performance tests. The company currently is using only L-head engines and the switch to overhead valve indicates a trend toward higher compressions. The engine is considerably smaller than the current type being only about 170 cu in. displacement. It is doubtful, however, whether the engine will be used in either the car or truck line before 1952.

END

(Please resume your reading on P. 30)

SLOWGAN

D.D.T.—Don't die trying.

HYPOID

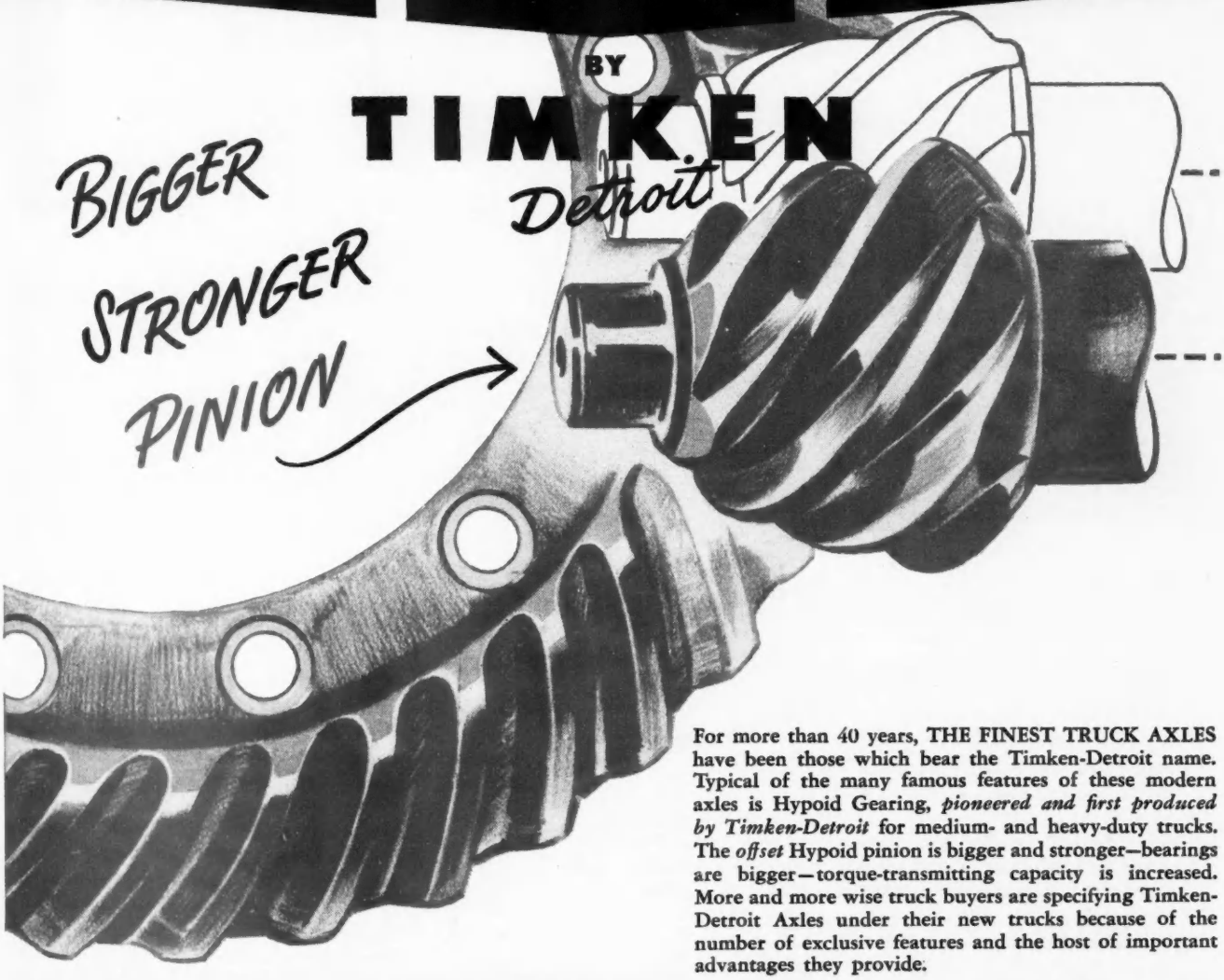
HEAVY-DUTY AXLE GEARING

Pioneered *Proved* *Produced*

BY

TIMKEN *Detroit*

BIGGER STRONGER PINION



For more than 40 years, THE FINEST TRUCK AXLES have been those which bear the Timken-Detroit name. Typical of the many famous features of these modern axles is Hypoid Gearing, *pioneered and first produced by Timken-Detroit* for medium- and heavy-duty trucks. The *offset* Hypoid pinion is bigger and stronger—bearings are bigger—torque-transmitting capacity is increased. More and more wise truck buyers are specifying Timken-Detroit Axles under their new trucks because of the number of exclusive features and the host of important advantages they provide.

Specify Timken-Detroit Axles for these Famous Features:

Hypoid Gearing • "3 for 1" Final Drive Interchangeability • Two-Speed Spring-Flex Power Shift • Full-Corner Forged-Steel Housings with Welded-On Covers • Cycle-Welded Brake Liners • Torsion-Flow Axle Shafts • Weld-Built Tubular Trailer Axles • "Cradle-Ride" Tandem Drive Units

TIMKEN *Detroit* AXLES

A PRODUCT OF THE TIMKEN-DETROIT AXLE COMPANY

DETROIT 32, MICHIGAN

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Hydraulic Fifth Wheel Lift

Continued from Page 75

When he sets the load down, he moves the cab lever to the rear and the trailer is lowered. Then he operates an hp valve on the dash which actuates a brake chamber on the fifth wheel to release the lock. The hoses are disconnected, and the load is disconnected. That's how easy it is.

Construction Costs

BUT what does all this cost, and how can another operator make up a similar lift? Shirk estimates that a handy mechanic can build the lift in approximately 200 hours. It is assumed that he will be working in off hours, so the time element should not be as imposing as it would seem.

The hydraulic equipment consisting of power take-off shaft and U-joints, two 5½-in. cylinders, manifolds and piping will cost about $425. Since regular dump body lifting mechanisms have more travel than is necessary for this installation, it will be necessary to have the cylinders and piston rods cut down. If this is done in a machine shop, it will cost about $20. While it may not be extremely necessary, Shirk stabilized the tractor by straightening out the rear springs and adding five short leaves. This keeps the tractor from swaying on uneven ground and also makes possible a lower mounting of the fifth wheel to contact all heights of trailers. This costs around $50. Miscellaneous parts such as cross shafts, bolts, washers, lights, switches and connections cost about $75. And the steel will run approximately $100, although many shops may have scrap material which will be satisfactory for much of the structure. This brings the entire cost to $670, not including labor.

Construction Details

THE platform of the lift consists of a rectangular frame 82 in. long and 26 in. wide, constructed from 6-in. channel iron. Side rails are two sections of channel iron placed open end to open end and welded. A third section of channel is backed against this to reinforce the frame. End sections are one-piece channel welded to the side rails as shown.

The elevating platform is mounted to a front upright located just behind the cab. It is hinged at this point with a 1⅛-in. steel shaft placed crosswise through a similar mounting on the other side and held in place with nuts. The upright is a ⅜-in. steel plate 18 x 21 in., welded to the truck frame at the outside just behind the cab. Four-in. sections of sheet steel are boxed around the frame, as shown, to provide a mounting, and a 6-in. sleeve is welded to the plate to form the bearing section. This support provides a mount that is 9 in. from center of bearing to top of truck frame.

The fifth wheel plate is a ⅜-in. steel plate 30 x 48 in., welded to the rear section of the boom. To this is mounted in the conventional way a small size fifth wheel. The rear 8-in. section of the fifth wheel plate is cut to a width of 26 in. so that the entire assembly will fit between the truck frame when the platform is at rest.

The platform is supported on a cross piece made of 6-in. channel iron reinforced with angle iron 26 in. long and welded to the boom 27¾ in. from the rear end. Two sections of ⅝-in.

(TURN TO PAGE 132, PLEASE)

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$.50
W. B. D. EXCHANGE ALLOWANCE CREDIT
The retail purchaser of this new genuine Bendix Drive is entitled to a credit allowance of $1.00, which applies to the purchase price of the complete unit, in exchange for the worn Bendix Drive (WBD). All other classes of trade receive a merchandise credit allowance. No merchandise credit allowed unless this tag is returned with the worn Bendix Drive to our central distributor.
PLEASE DO NOT EXPECT TO RECEIVE YOUR CREDIT WITHOUT THIS TAG.
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Be sure you always replace with the *genuine* Bendix Drive! Your customers get twice the satisfaction and, at the same time, you get two separate profits.

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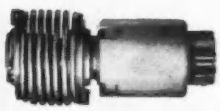
INSTALL THIS DRIVE →



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BOILING POINT 370°F: No danger of brake failure due to vaporization.

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SHOCK, JACK AND KNEE-ACTION OIL

NAPA Assurance of Quality

Hydraulic Fifth Wheel

Continued from Page 130

sheet steel 6 x 4 in. are welded into the channel as shown, and the bottom corners are rounded. This serves as a bearing surface for the piston rods of the hydraulic cylinders. A similar arrangement is fixed to the opposite side of the cross piece support so that the cylinder piston rods can be connected to the boom inside the frame of the tractor. These upper supports are drilled and 1⅝-in. shafts 4 in. long are used to connect the piston rod yoke to the platform support.

A guide for the platform is made of 6-in. channel iron welded 4 in. from the rear and set at an angle of 36 deg. Thus the guide sets at perpendicular when the lift is down. This piece is a rectangle 26 x 15 in. made of channel iron placed open end to open end. A 2 x 2-in. angle iron is placed from corner to corner and welded, and a 2-in. strap iron is welded across this in an X arrangement to reinforce the guide. Being 26 in. wide, this section fits between the frame of the truck to guide the boom in its travel, thus eliminating any tendency to rock or twist in transit.

The support for the hydraulic cylinders is a 6-in. channel iron 34 in. long reinforced on both sides with 2 x 2-in. angle iron of similar length. A 1⅝-in. shaft threaded at both ends is clamped into the channel with U-bolts and set into the bearing support provided on the frame. This bearing support is a ⅜-in. sheet steel plate 18 x 24 in. welded to the outside of the truck frame on both sides 28 in. from the front of the lift. This plate is drilled to take the cross-shaft, and hex nuts hold the shaft in place while allowing for the whole assembly to turn with the raising of the lift.

Hydraulic Mechanism

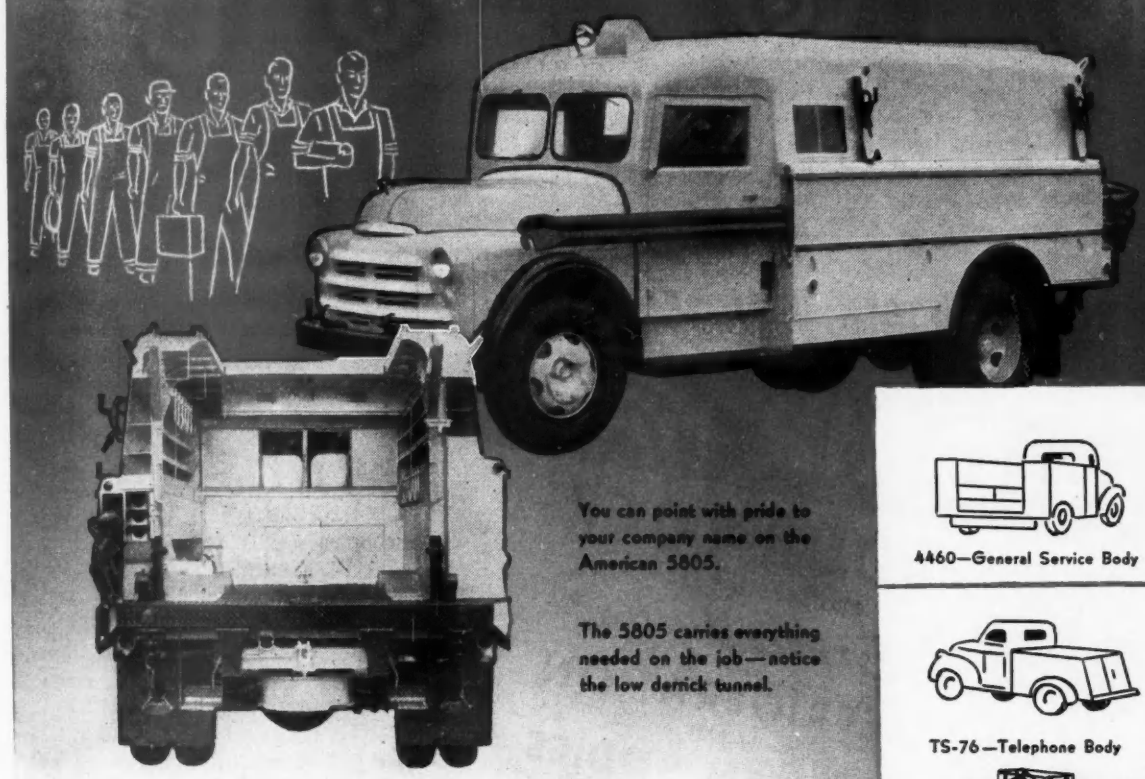
THE two hydraulic cylinders are welded to an 8 x 8-in. steel plate which is in turn bolted to the top of the channel iron in such a position that the cylinders line up with the bearing support provided on the boom for the piston rods. Thus the distance between the bottom support for the cylinders and the top support for the piston rods is 4½ in., allowing for the proper angular positioning of the cylinders.

For this particular installation and with this particular type of hydraulic lifting mechanism it was necessary to cut off 5 in. from the cylinder and a similar amount from the piston rods.

(TURN TO PAGE 134, PLEASE)

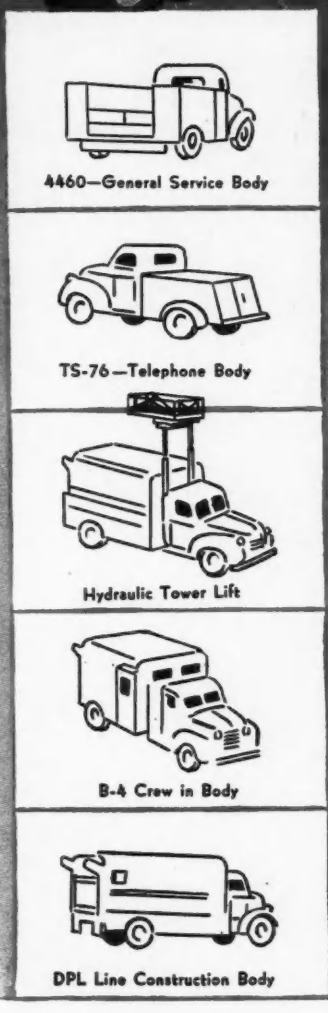
American 5805

7-MAN CREW COMPARTMENT LINE CONSTRUCTION BODY



You can point with pride to your company name on the American 5805.

The 5805 carries everything needed on the job—notice the low derrick tunnel.



designed for extra wide hood and fender lines

Crews like the idea of a 7-man compartment, integral with body. Good visibility, ventilation and padded seats add to crew comfort. Cab easily accessible from both sides of body. Hinged front seat permits easy entrance to rear seat. Streamlined compartment utilizes space available on the current wide models of truck chassis.

Body is exclusive American line construction design with a place for ladders, pike poles, derricks and the dozens of other items (large and small) needed on the job.

Available in basic length of 138 inches.

This 7-man crew compartment body, replacing Model 3714, has been a long-time favorite with light, gas, water, telephone, municipalities and contractors.

Ask The American Coach & Body Company about Model 5805, streamlined for the extra wide hood and fender lines.

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ACB and

Hydraulic Fifth Wheel

Continued from Page 132

This allows for sufficient clearance between the cylinder mounting and the road, and still permits sufficient travel to lift the trailer to safe height for movement.

Another modification necessary was the change in the inlet adapter for the high pressure hose. It was moved from the bottom of the cylinder, where it might become damaged from insufficient road clearance, to the side of the cylinder at the very bottom. The outlet adapter remains unchanged. Hoses are connected in the conventional way. In fact hoses, pump and power take-off setup is similar to a dump body installation.

It is necessary to remount the emergency valve and the stop light switch in order to keep them free of the hydraulic mechanism and the lift. In this case both units were installed on the inside of the truck left frame, just behind the cab.

Since there was a tendency of the load to roll on flexible springs with a high fifth wheel mounting, the rear truck springs were heated and straightened out, and five short leaves were added. Thus there is just enough movement in the springs to permit short side movement of the trailer. There is no bounding or side sway to affect the safety of the moving load.

In order to lower the fifth wheel so that any trailer could be hooked up without complication, 9.00 x 20 tires were installed. With a small type fifth wheel, height has been brought down to 45 in. from the ground.

Safety Features

ONE of the safety features of this unit is the shop-devised safety light system mounted on the dash, one of which shows when the load is level and safe to move, and the other which shows the driver when the fifth wheel is locked.

A stop light switch is mounted on the truck left frame and a modified contact arm is devised in such a way that contact with the boom is broken when the boom rails become level with the ground. This causes the amber light on the dash to go out, showing the driver that the landing gears are off the ground approximately 8 to 12 in.

The red light on the dash is connected to a stop light switch at the fifth wheel lock in such a way that it lights up when the electrical lines to the trailer are connected. The stop light switch is connected to a regular air brake chamber set on the fifth wheel in such a way that it will push the lock shut when the HP valve is actuated on the dash. At this time contacts of the switch are broken and the red light goes out, showing the driver that his fifth wheel has locked.

Two levers in the cab actuate the lift. With one lever set in forward position the hydraulic pump is set in motion and the lift is raised. When the lever is returned to the rearmost position, the hydraulic pump lowers the platform. The center position is a neutral setting. The smaller lever mounted at the floor of the cab is the transfer case shift. The HP valve is of conventional design, simply connected to the brake chamber so that air from the air system actuates the push rod to open and close the fifth wheel locking mechanism.

Credit for this invention goes to three men at Shirk: Lloyd Hurst, shop foreman; William Kline and Carl Miller; the unit being promoted by John Horst, fleet superintendent.

END

(Please resume your reading on P. 76)

USE *the* NEW

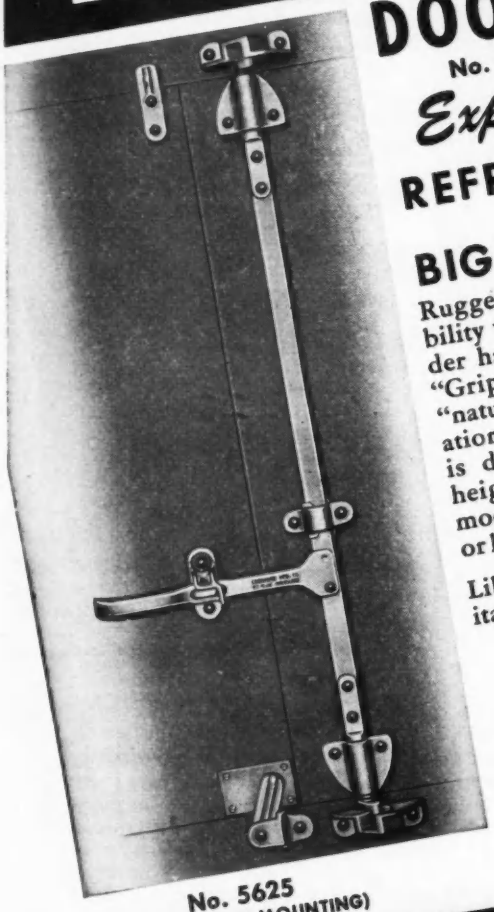
EBER-GRIP-HARD

DOOR LOCK

No. 5625 & 5625X

Expressly for

REFRIGERATION AND BIG VAN BODIES



Ruggedly constructed for durability with long service life under hard usage, the new Eber-"Grip"-Hard Door Lock is a "natural" for use on Refrigeration and Big Van Bodies and is designed for various door heights and thicknesses. This model is easily installed at right or left on single or double doors.

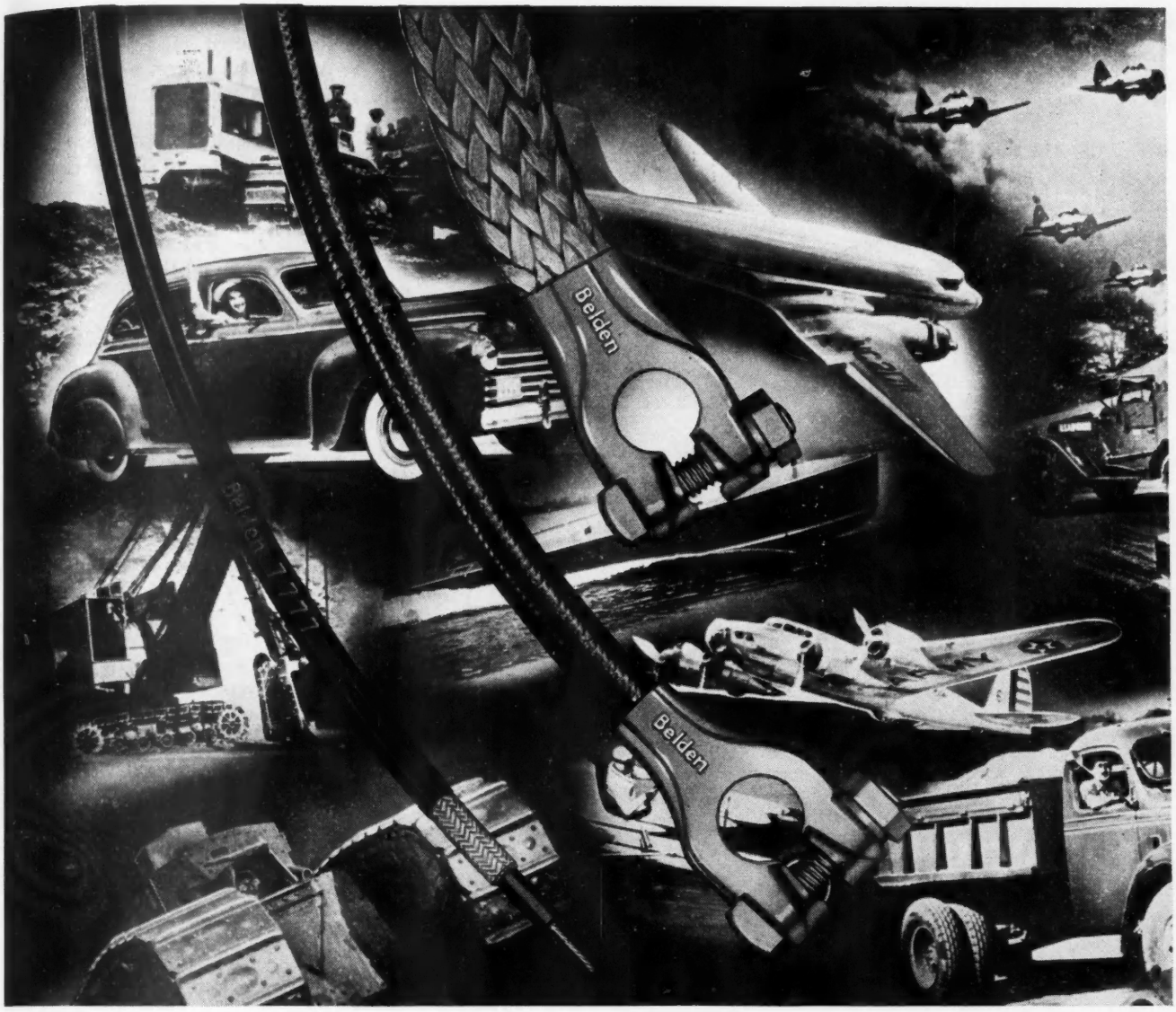
Liberal bearing surfaces facilitate easy operation and leverage in lock action assures complete door closure and a ready breaking of frost seal upon opening.

A special acting padlock eye affords a double locking effect.

No. 5625
(RIGHT HAND MOUNTING)

EBERHARD *Long Run*
TRUCK BODY FITTINGS

EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Company, EVARTS AVENUE • CLEVELAND, O.



MORE MILES • MORE SATISFACTION

with Belden SPARK PLUG WIRES
BATTERY CABLES
PRIMARY WIRES

FOR EVERY AUTOMOTIVE WIRING NEED

Battery Cables • Spark Plug Wires
Lighting Wires
Cordlites, Extension Cords, and Tools

Belden *Automotive* **WIRE**

Test Technique For Alcohol-Water

Continued from Page 77

eter of the Automotive Laboratory of the Research and Development Section.

Determining Requirements

THE procedure was to dispatch a truck to the dynamometer room, where an engine tune-up was performed, the injector installed, and the fuel and injector fluid lines connected to flow measuring devices. The octane requirement, by use of standard reference fuels, was obtained under most severe operating load conditions, with and without injection. In most cases we held the rate of injection from 18 to 21 per cent of fuel consumption under conditions of maximum injection.

The length of time or range of injection was governed to a large degree by general engine characteristics, some engines required injection over a longer period than others, to suppress detonation. In this respect, it was found that injection in most engines could be set to cut-out above 50 in. of water manifold vacuum. The injection rate could be controlled by the size of the jet in the injector, and the period of injection was responsive to a spring loaded diaphragm, the latter acted on by vacuum on one side and atmospheric pressure on the other.

The results of this preliminary investigation indicated that 12 different standard injector characteristics were required to cover the entire fleet. Everyone of these 12 types was carefully calibrated to show injection rate and period vs. manifold vacuum, and then each data sheet was completed with pertinent information concerning the application (see sample, page 77). Included on each sheet was the truck make, engine make, bore and stroke, updraft or downdraft carburetor and jet size. The data sheet was then assigned a number which was then stamped on the injector.

Installation Procedure

HAVING established the proper requirements corresponding to the trucks in question, this information was transmitted to the injector manufacturuer who then made up the required number of injectors for each category in the form of kits which included injector, tank, support, filter, lines, gaskets, etc. Installing the devices on the trucks was rather easy for conventional type unit, however, cab-over-engine units were a bit more difficult due to accessibility. The labor of installing the complete unit ranged from 2 to 8 man hours per truck depending on accessibility and other interference encountered.

We designed the tank to hold about 4.4 gal of fluid and had originally planned to mount it on the radiator tie-rods under the hood. The weight of the tank and fluid together with vibration, soon convinced us that the tank location was unsatisfactory. It became necessary, therefore, to relocate the tanks with the final resting place being in the cab. Although Iso-propyl alcohol is not considered toxic, the characteristic alcohol aroma dictated a policy of good tank caps, particularly during adverse weather.

Routine Maintenance

THE next item that we considered was some means of quickly checking the injectors themselves during the test

(TURN TO PAGE 138, PLEASE)

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THE NEW DRUM *Safety* JACK

with SWIVEL ACTION

SPOT IT—under any axle, from any angle

SWING IT—Bring dollies into position for removing wheels without lifting

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ONE MAN does the work of two with this new, improved heavy-duty jack. No wheels to lift—no crawling under trucks. Works anywhere—under any wheel—on trucks or tractor-trailers.

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Freight and taxes extra

**$614.00 is the price of this 12-ft. straight-frame model — complete with Tailgate, painted and mounted on your chassis. This is a typical Fruehauf Truck Body buy.*

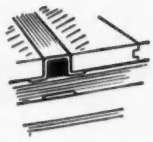
Check these famous exclusive Fruehauf Body Features:

1. *Double-locking coin-pressed roof seams.* Positive "seal" against dust, dirt, water.

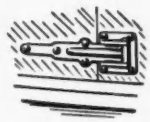
2. *Tubular steel side members.* Construction combines great lightness with increased strength.

3. *Plywood belt-high lining and roofing.* Provides extra protection of cargo ...extra sound-proofing.

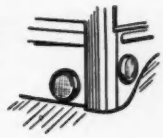
4. *Welded full-length floor channels.* Give floor boards extra strength without extra weight.



5. *Heavy-duty pressed-steel hinges.* Extra-sturdy construction gives added strength to tailgate or doors.



6. *Deluxe lighting and safety reflectors.* Provide positive clearance markings.



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Look at the features! *Extra* sturdiness, *extra* low-weight and *extra* long life are the result of these exclusive Fruehauf *engineered* features. And along with these important features, Fruehauf brings you custom-quality . . . at great production-line savings.

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Ready for the Road in a Matter of Hours . . .

FRUEHAUF Truck Bodies

Hear Harrison Wood in "This Changing World"—every Sunday Afternoon over ABC. Consult your Local Paper!

Test Technique . . .

Continued from Page 136

period. It is quite apparent, that every mechanical device will require calibration and maintenance during its operation, and we did not feel that the chassis dynamometer could be used for the regular routine checking anticipated. It is my opinion that the test bench designed by the manufacturer for quickly checking the injector devices contributed much to the success of this particular testing program.

Essentially this test bench was designed to simulate manifold vacuum as encountered in the engine. By means of calibrated glass containers, we could quickly ascertain the injection rate at any manifold vacuum, together with the start and stop of injection. We established bins in our stockroom for extra injectors for the various classifications, so that when improper functioning of the injector on any truck was indicated, it was simply a case of replacing the device which required only a few minutes. The faulty operating injector was then checked on the test bench, the necessary repairs or recalibration made, and the unit returned to its proper bin in the stockroom.

In this respect, it might be mentioned that injector maintenance was not out of line compared to maintenance of such items as carburetors, distributors, spark plugs, instruments, etc. Although the use of average figures could be misleading since averages cover good, bad, and indifferent data, I will nevertheless submit an average maintenance requirement which might serve to reflect our experience. If we divide the total injector maintenance hours (not including installation or tank relocation) by the number of units, we arrive at a figure of about 3 hours per truck per year.

It is quite obvious that in a test of this kind, the first large scale project on injectors would present some problems on maintenance and operation. For example, we soon found that ordinary anti-freeze alcohol containing denaturements, could not be used in our test because of denaturant separation on the filter. We also experimented with various types and sizes of filters to exclude foreign particles from finding their way into the orifice. The clogging of the line filter naturally made the injector device inoperative, so that regular cleaning and filter inspection was recommended.

Fluid Dispenser

OUR preliminary tests indicated that a rather large amount of injector fluid would be dispensed in the course of the test period, so that planning along these lines appeared desirable. It was felt that the time to service the injector tank should be held to a minimum, and preferably combined with other duties, such as fueling, engine oil, and radiator liquid of the trucks. We finally installed dispensing pumps for the injector fluid on the service station islands inside the yard, with the result that the injector fluid tanks could be serviced at the same time as the other duties indicated. A large mixing tank for alcohol-water was used from which underground piping was run to the dispensing units. We received the Iso-propyl alcohol in 4000-gal tank truck shipments was then pumped to the large stationary tank together with the proper amount of water and rust inhibitor. The rust inhibitor was soluble oil in the proportion of about ½ of 1 per cent and is used to prevent rusting or corrosion in the tank or other parts of the injector device.

(TURN TO PAGE 140, PLEASE)

HI-TEMP
TRADE MARK
Heat Resisting
VALVE INSIDES AND CAPS

Solves Air Pressure Maintenance Wherever Tire Heat Is a Problem

Now you can stop road delays, costly tire repairs, and increase tire mileage. *Under abnormal hot tire temperatures, even up to 300° F. and more, the newly developed, heat-resisting air seal keeps Dill HI-TEMP tire valve insides and caps airtight, without sticking.*

Tire engineers and fleet operators, everywhere, are acclaiming this new Dill development. Wherever tire heat is a problem, you'll end tire pressure maintenance troubles by equipping your tires with the new Dill HI-TEMPS.

Save time and money this sure way. Change to Dill HI-TEMPS, today. Your wholesaler, tire or oil company can supply you, now.

DILL "HI-TEMP" VALVE INSIDES
No. 100-AH
New Dill special heat-resisting rubber gasket in cup and on barrel.

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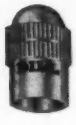
Lead gasket on barrel. New Dill special heat-resisting gasket in cup.



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No. 632 Dome Type
Heavy duty cap with swivel gasket of new Dill special heat-resisting rubber.

DILL "HI-TEMP" VALVE CAP
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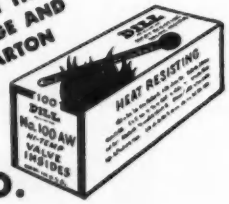
Lead gasket mounted over brass sleeve.

ASK FOR DILL "HI-TEMP" IN THE NEW ORANGE AND YELLOW CARTON



THE DILL MANUFACTURING CO.
700 East 82nd St. • Cleveland 3, Ohio
Branch — 1011 S. Flower Street, Los Angeles 15, California

Fleet Operators Save

with Fram Oil and Motor Cleaners

Fram Oil & Motor Cleaners save fleet engines, cut costs. Remove abrasives and corrosives. Outside-in flow assures greatest filtering area. Longer engine life.

Fram Filcron Cartridges remove particles down to one micron (.000039 of an inch)... offer highest clean oil flow rate, maximum dirt capacity, longer cartridge life, lowest clean oil cost per mile. Non-abrasive filtering media. Won't remove additives from compounded oils.

"I have four Fram-equipped buses, a car and a pick-up in very hard city operation. One bus shows over 60,000 miles... runs like new... has never been touched with a wrench. I change cartridges every 2000 miles. Fram saves half my oil cost..."

A. C. Robbins, Stephenville, Texas

"We operate school buses in all kinds of weather on roads of hazardous conditions. I experimented with Fram on one bus and found that Fram lengthens the life of the engine. Result: I purchased and installed 26 more Fram Oil & Motor Cleaners."

H. B. Walker, Kinston, N. C.

"For the past four years, we've had six motors in operation, all equipped with Fram Oil & Motor Cleaners. Due to the efficiency of these filters in removing all harmful sludge, grit, etc., we have cut our operating costs on these motors 50%."

C. G. Ellender, New Orleans, La.

Put FRAM on your fleet

Make this test. Prove to yourself that Fram can help you cut operating costs to the bone. Install Fram Oil & Motor Cleaners on your fleet. You don't risk a red cent. If, within 90 days you feel you can afford to be without this protection, your money will be cheerfully refunded.

Get FRAM Complete Engine Protection! Seal out engine-killing dirt, dust, grit, and abrasives that enter from the outside by installing Fram Carburetor Air Filters, Fram Fuel Filters, Fram Positive Crankcase Ventilators. Remove contaminants as fast as they form on the inside with Famous Fram Oil & Motor Cleaners. Test all four on your fleet and get Complete Engine Protection.

FRAM CORPORATION, Providence 16, R. I. *In Canada:* J. C. Adams Co., Ltd., Toronto, Ontario.

For Complete Engine Protection

FRAM

OIL - AIR - FUEL

FILTERS

Test Technique . . .

Continued from Page 138

All of the preliminary studies having been completed, servicing facilities installed, the operation of the test bench and instruction as to repairs and calibration of the units, the injector assemblies were installed on the trucks, and on July 1, 1947, the truck fleet started its operation with water-alcohol injection.

Best With Low Compression

WE found that in our truck fleet, those engines with compression ratios of less than 6:1 and corresponding octane requirements of 70 to 72 were satisfied by the materials used during the test. On the other hand, quite a number of newer units having 6.25:1 compression ratios required octane numbers above 75 to satisfy the requirements. It became necessary to increase the rate and period of injection to help overcome the anti-knock deficiencies. Even then, further adjustments of spark timing were also necessary to operate these vehicles on the test program. As a matter of fact, engine octane requirements kept increasing so that the eventual cure was replacement of cylinder heads resulting in compression ratios of around 6:1 for the particular units in question. Again, please keep in mind that the injector fluid available at the time gave 6 to 8 octane number boost, so that it is quite possible that the new "Vitol" claimed to give octane number boost 20 or more numbers could have satisfied these truck engines.

General Conclusions

IN conclusion, I might cite briefly the results of the test:

1. The injector devices gave very little trouble and at no time was it necessary to tow a disabled vehicle, due to faulty injector, back to the garage.

2. The injection of anti-detonant materials is practicable for increasing anti-knock values.

3. Because of good injection control, that is, injecting only when required at high load factors, we were unable to observe any signs of rusting of premature wear on the inside of the engine.

4. "There were indications that valve and spark plug life increased in this operation. As a low octane non-commercial fuel and a special non-commercial alcohol-water blend were used in these tests it is rather difficult to assay fully the savings in dollars that would result to a fleet operator if he used regular commercial gasoline and the present Vitol mixture."

5. Since we were injecting up to 20 per cent of fuel consumption at the point of maximum injection, we experienced a slight loss of about 1 per cent in power during that period.

6. On the high compression units where octane requirements were not satisfied, we encountered an increase in wear of the top piston ring and groove. It is our opinion that detonation and/or pre-ignition caused ring flutter and resultant ring wear or breakage.

The economics of the use of injector devices in commercial vehicles is dependent on offsetting the injector fluid cost and investment costs by maintenance savings. The pendulum could swing more in its favor, of course, if in addition, a lower-priced fuel could be made available. As pointed out, the system is practicable and its place in the transportation field is one of economics to the operator. If money can be saved by its use, then it will be considered seriously by commercial vehicle operators.

END

(Please resume your reading on P. 78)

BIEDERMAN

The All-Star Truck

★ Advanced Design
★ Ready Accessibility of all Parts
★ Sturdy Construction
★ Dependable Power
★ Capacity for Big Loads

FLEET OPERATORS

FIND THE ANSWERS TO THEIR PROBLEMS WITH BIEDERMAN TRUCKS. WIRE OR WRITE BIEDERMAN MOTORS CORPORATION, CINCINNATI 14, OHIO.

BIEDERMAN MOTORS CORPORATION
CINCINNATI 14, OHIO

FASTER, MORE ACCURATE VALVE JOBS

GREATER PROFITS . . .

Kwik-Way

Super-Speed

VALVE FACING MACHINE

A WET GRINDER

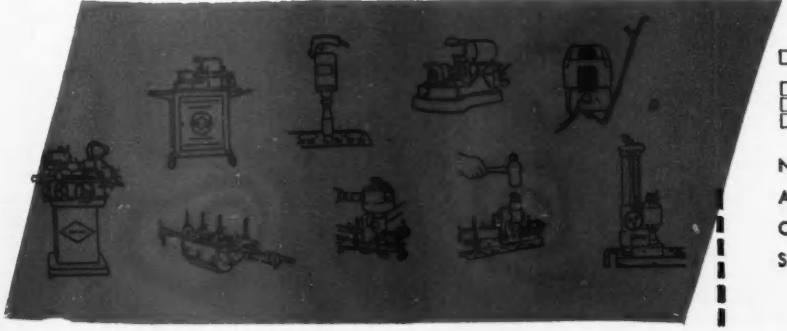
- Refaces 15° valves as easily as 30° and 45° *(without special attachments)*
- Quick-acting lever operated chuck—handles Ford as rapidly as straight stem valves
- Automatically centers valve for true alignment.
- Automatic clutch starts and stops grinder spindle, chuck, and coolant pump
- Accurately grinds valve stems for proper clearance
- Grinds rocker arms to original rounded contour

Accurate, dependable, fast. Simple and easy to operate. The Kwik-Way Super-Speed Valve Facing Machine is outstanding in the motor reconditioning field. With the Kwik-Way Valve Seat Grinder and Valve Seat Insert Tool you have a combination that can't be beat for profit-making work on valve jobs.
Write for complete details.

The KWIK-WAY Super-Speed mounts on convenient service cabinets with built-in wet grinding attachment. Bench type wet grinding unit also available.

FACTORY TRAINED KWIK-WAY REPRESENTATIVES IN ALL PRINCIPAL CITIES

CEDAR RAPIDS ENGINEERING COMPANY
912 17th STREET N.E. — CEDAR RAPIDS 3, IOWA
Serving the Motor Rebuilding Industry Since 1920



CEDAR RAPIDS ENGINEERING CO.
912 17th Street N.E., Cedar Rapids 3, Iowa

Please send information on KWIK-WAY Machines Checked

- ☐ Valve Facing Machines
- ☐ Valve Seat Grinder
- ☐ Valve Seat Insert Tool
- ☐ Complete Motor Rebuilding Equipment
- ☐ Cylinder Boring Machine
- ☐ Vortex Suction Device
- ☐ Line Boring Machine
- ☐ Piston Cam Turning and Grinding Machine

Name .....
Address .....
City..... Zone.....
State .....

Rejuvenated Tractors Live Longer

Continued from Page 69

up as they come up for repair—or as they go out of date with new and better equipment becoming available from the manufacturer.

10 Road Calls a Year

ROAD calls? Oh, yes, we do have one now and then. But they're gradually fading out of the picture. We can't afford road calls. So we have made arrangements to "retire" them. We operate 2,700,000 miles a year with 10 road failures. That's 270,000 miles per road failure. There is no reason why this can't be upped to 300,000 next year. In fact, we haven't had a road call now in 60 days of operation.

When our trucks leave the shop, they are ready to make the trip *to* and *from* Louisville, Ky., Cincinnati, Ohio, and Centralia, Ill., without trouble. That's what we expect of our seven mechanics, five service men, and one parts control man. That's the faith we put in good equipment properly maintained and handled—regardless of its age.

Here's the way our shop handles the maintenance of these vehicles:

Trucks are given the once over prior to each trip. They are run through the service lane, where they receive gasoline, oil, air and water checks. At this time the attendant makes a quick check of the vehicle for tire defects, loose bolts, engine noises, leakage, condition of lights, etc. When the truck pulls into the yard, the brakes, horn, steering and power is checked. Not until then is it ready to roll.

At the 2000-mile mark the crankcase is drained and refilled, and the vehicle gets a lubrication. We use two men on the lubrication, one working below and the other above. They make checks for wear, breakage, looseness, at this time and are trained to pick up potential failures with uncanny accuracy. We find it more efficient to use the service lane for this lubrication and check because both men can work at the same time. For this reason we have no lifts or pits in the shop.

7000-Mile PM

EVERY 7000 miles the truck receives a complete PM inspection. A typical job consists of checking compression pressures, fuel pump capacity and pressure, a voltage regulator check and setting, distributor adjustment (on the oscillograph) spark timing, oil pressure check and an examination of the cooling system. A full set of electrical and engine testing tools is at arm's reach for the mechanic. We find it more efficient to use one man for this engine test, then hold him responsible for the condition of the engine when it leaves the shop. We fully appreciate the savings of a dynamometer for this type of engine checking, and it is expected that one will be installed in the very near future.

After an engine tune-up, the truck is shunted up the line to the unit repair station, where it gets a checkup for tire runout, bearing wear, front end misalignment, condition of brakes and condition of power train units. When a check discloses a needed part in any of these assemblies, rebuilt units are installed on the spot.

Should the engine test reveal a worn engine, a rebuilt powerplant is wheeled from the stockroom and set into the chassis. We expect, and get, 100,000 miles from rebuilt engines and this is without valve work, ring or bearing replacement. It is seldom that an engine

(TURN TO PAGE 144, PLEASE)

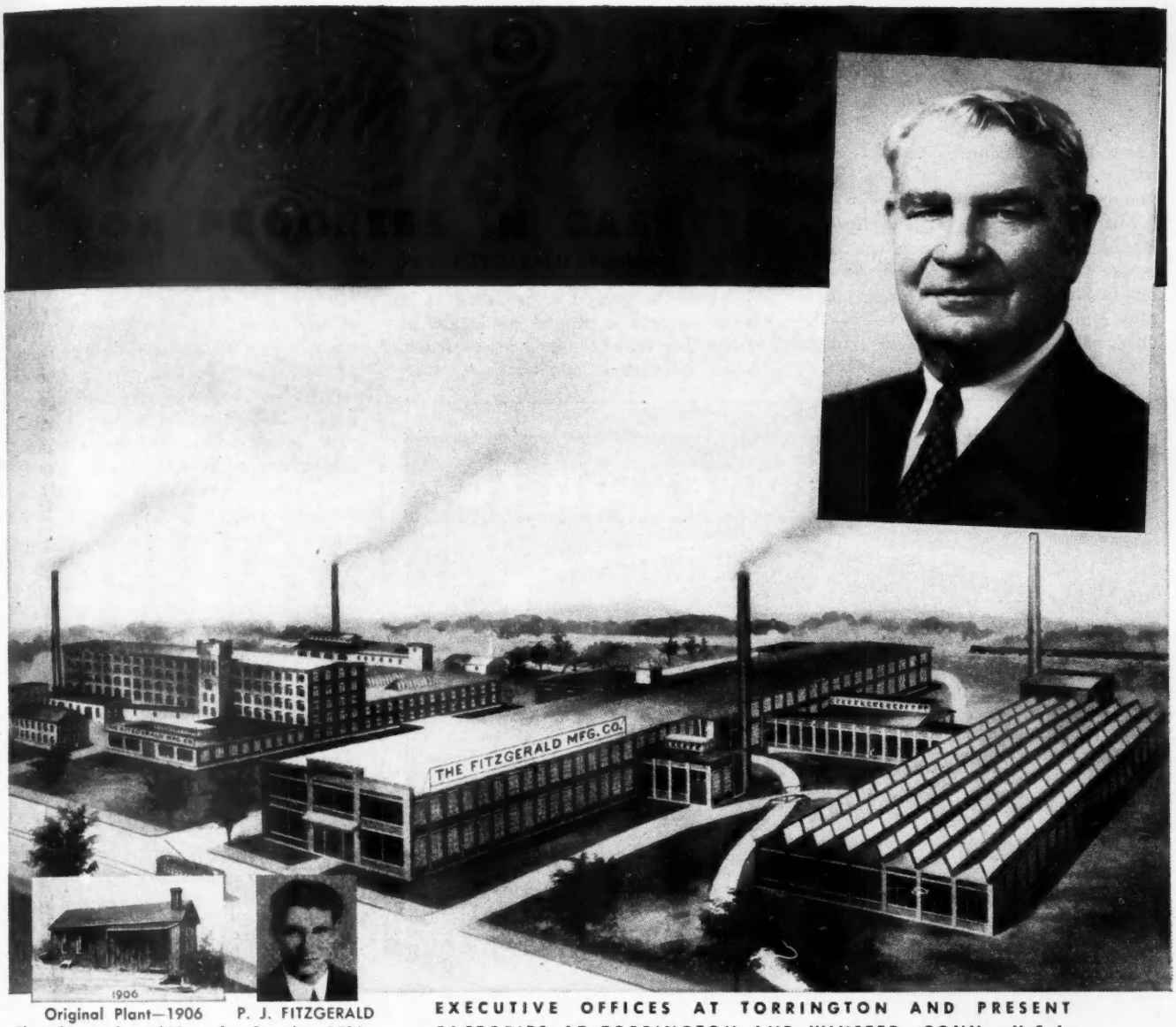
THE REAL REASON FOR RIBS...

Brake drums in heavy duty service are subject to *severe flexing stresses* imposed by the pressures of of the shoes, tending to stretch the drum out of shape; and high temperatures, sometimes running to over 1000°. The characteristic ribs on GUNITE Brake Drums look like cooling fins but are not. Their purpose is (1) to stiffen the drum and hold it in shape against the shoe pressures, (2) to permit the use of thinner sections and thus reduce internal compressive and tensile stresses that produce "heat check", and (3) to permit axial expansion of the braking surface at high temperatures, further tending to prevent heat check and breakage. The GUNITE rib design was developed by hundreds of gruelling over-the-road tests and its effectiveness has been demonstrated by a thousand million miles of silent proof. *Buy RIBBED Gunites for heavy duty braking!*

Write for our new folder giving further information on the advantages of ribbed drums.

MADE BY
GUNITE FOUNDRIES
ROCKFORD, ILLINOIS

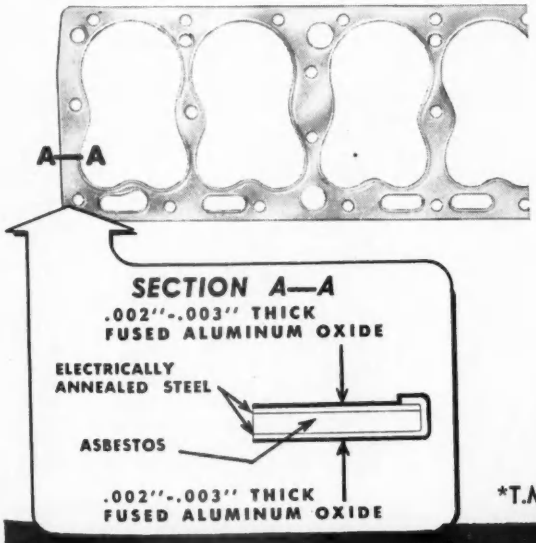
GUNITE CAST WHEEL ASSEMBLIES FOR TRAILERS AND TRUCKS INCLUDE FAMOUS GUNITE BRAKE DRUMS



Original Plant—1906
Floor Space about 250 sq. ft.

P. J. FITZGERALD
Founder—1906

EXECUTIVE OFFICES AT TORRINGTON AND PRESENT FACTORIES AT TORRINGTON AND WINSTED, CONN., U.S.A.



For a lasting, perfect seal in today's new high compression engines, it pays to depend on Fitzgerald Metallic Aluminum-Fused-Oxide Steel Asbestos Gaskets*.

Under the new demands of the most modern engines, they are providing the same rugged, dependable performance that has won Fitzgerald Gaskets world-wide acceptance . . . from our first, made in a one-room shop in 1906, to the complete line being built in our modern plants today, exported by the world's largest automobile manufacturer to all foreign countries except Canada, where we employ our own sales force.

Combining the strength of specially tempered steel, aluminum's resistance to rust and corrosion, and a top-grade asbestos filler, these newest Fitzgerald Gaskets withstand high pressures and heat that cause other gaskets to fail.

THE FITZGERALD MANUFACTURING COMPANY
Torrington, Connecticut

*T.M. Reg. U. S. Pat. Off.

FITZGERALD *Gaskets*
SINCE 1906

Rejuvenated Tractors

Continued from Page 142

has to be opened in this period for any reason, but we religiously check condition at each PM period.

Engine rebuilding is done by one man at the rebuilding station, where we rebore the block, install new con rod bearings, rings, pistons, valves, piston pins, guides and springs at the 100,000-mile interval. We get three rebores from a block.

The engine is equipped with rebuilt assemblies at this time. This includes fuel, water, oil pumps, carburetors, generators, starters, distributors. Each rebuilt engine gets a 6-hour run-in on a stand before it is considered ready for the stockroom. During the break-in we add two quarts of break-in oil, draining it when the run-in is done. Thereafter a quart of such additive is added at each oil change period.

When the engine is installed in a truck, it gets a rugged road test, at which time it is examined for oil leaks, water circulation and leakage, overheating, oil pressure, vibration, noises. Then, too, the brakes, clutch, steering lights, alignment get a careful going over by the mechanic on the road test. When the reconditioned vehicle is handed to the driver, we know it is as perfect as mechanical skill and accurately rebuilt parts can make it.

We attribute this 100,000 miles from rings and valves to good workmanship, done at the time period which seems to conform to the most efficient operation of that engine in our service. With trucks using hydraulic valve lifters, no adjustment during that period is necessary. Main bearings give us approximately 200,000 miles before replacement is necessary. We do not grind crankshafts because we can get 300,000 miles from a crankshaft without complication, after which we feel it is fatigued. While some fleets may use them longer, we feel that 300,000 miles is about all present day metals can provide under the service we expect of our vehicles.

Overhaul Periods

WE have no cut-and-dried mileage set-up for other checks and replacement. If the PM discloses a worn engine at any time, it is available immediately. Likewise, fuel and electrical units are installed if the PM shows them unreliable.

At approximately 40,000 miles we make a careful check of the condition of the brakes and lining. We pull the wheels, inspect the bearings and replace parts found worn or damaged.

(TURN TO PAGE 146, PLEASE)

Put Your Money on the Thermoid Line

Built for Heavy Duty Service

Thermoid Radiator Hose has proven to be better where it counts—on the road, under the toughest conditions. Precision made with Multi-Ply wrap, Thermoid Radiator Hose is impervious to hot water and anti-freeze. It lasts longer and lowers maintenance costs. Start saving money now by using Thermoid Radiator Hose on *all* your equipment.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

Traveling Store

A new Dodge Route Van featuring low floor, full headroom and fluid drive, forms the basis of Ross Harrison's store on wheels. He operates out of Billings, Mont., for Snap-on-Tools and stocks 3300 automotive and aviation tools, most of which are easily displayed, thanks to the unique cabinets and wall hangers shown. The load weighs 2775 lb

WHY REBUILD AND RE-UPHOLSTER SEAT CUSHIONS?

IT'S THRIFTY

TO REPLACE THEM WITH...

TRAVEL COMFORT CUSHIONS

According to a nationwide survey*, your seat cushions last about two and one-half years. Then, perhaps, you have them rebuilt. If you're like most fleet owners, you and your drivers usually find rebuilt seats an unsatisfactory make-shift.

Now, for the first time, you can replace them with brand new, expertly built Travel Comfort Cushions (seats and backs) for very near the cost of rebuilding your old ones — Cushions which are far superior in quality, comfort, service and satisfaction.

Whether you operate one truck or a hundred . . . whether they're all alike or each a different model . . . McInerney will provide new cushions designed to fit your particular vehicle, made with a spring construction which has been scientifically developed and engineered specifically for truck use and expertly upholstered and tailored in your choice of upholstery materials and coverings.

Travel Comfort Cushions give you a better, longer-lived seating unit which will eliminate road shock, reduce riding fatigue, and provide greater comfort for your drivers.

WRITE FOR information about Travel Comfort Cushions . . . the easy, economical and satisfactory way to solve your seating problems.

TRAVEL COMFORT CUSHIONS

McInerney

*5000 fleet owners and operators surveyed by Commercial Car Journal

SPRING & WIRE COMPANY

669 GODFREY AVENUE, S. W. • GRAND RAPIDS 2, MICHIGAN

Rejuvenated Tractors

Continued from Page 144

Brakes get an adjustment at this time, and drums found worn will be reground if necessary. We expect, and usually get, 250,000 miles from brake drums before regrinding is necessary.

Brake linings are replaced at 100,000 miles, when the engine is rebuilt. At 125,000-mile intervals we tear down the drive line, replacing worn transmissions, U-joints and rear ends. King pins, bushings and steering linkage are checked at 175,000 miles. It is necessary to rebush the front end at this time. An alignment check of both front and rear wheels on the tractor, and the trailer wheels is made. At 200,000 miles we figure on an overhaul of the suspension system, replacing weak spring leaves, rebuilding spring eyes and replacing all worn parts.

7-Section Shop

OUR SHOP is divided into seven sections for working convenience. Being relatively small, 90 x 75 ft., for servicing this many units, we must have efficient placement and tidy workmanship. The engine rebuild section is located in one corner, where we have the lathe, boring bar, engine crane, cleaning tank, overhaul stand, tool boards and hand tools. Next down the side comes the unit repair section, with power wrenches, jacks, hand tools, stands and welders.

The next department is the tune-up section, with all electrical and engine testing tools necessary for the job. The opposite corner houses the parts room, and along side is the trailer rebuild section with parts and tools for body skin replacements, painting, and body repair. The tire department holds new and old carcasses and repair facilities for tubes.

The daily checks are handled at one side, where two doors provide easy exit or entrance. Here are located the air station, the lubrication equipment, the water, oil and gasoline hoses, all centrally located for convenience and speed in servicing the tractors.

We use 140A and 150A White trucks with some Macks. Twenty-six of the tractors are conventional jobs, while six are COE's. Our 58 trailers range in length from 30 to 32 ft. and are of aluminum and stainless steel construction.

END

(Please resume your reading on P. 70)

That's why cost-conscious operators everywhere use genuine Velvetouch exclusively. They know Velvetouch clutch plates run cooler . . . require less maintenance . . . and last longer *because* they're *all-metal*. And that Velvetouch can't rot or glaze like asbestos. For extra milage, safety, and economy . . . equip your own heavy-duty trucks with genuine Velvetouch.

FOR BRAKE AND CLUTCH USE

Velvetouch

25 years of service
1924-1949

THE S. K. WELLMAN CO.
1374 East 51st St. • Cleveland 3, Ohio

Owner-operator Jasper Shay, contract hauler of Cleveland, depends on Velvetouch to keep his tractors rolling.

THE S. K. WELLMAN CO.
WAREHOUSING CENTERS

ATLANTA . 119 14th St., N. E.
BOSTON . 171 Brighton Ave.
CHICAGO . . 2800 S. Parkway
CLEVELAND . 1392 E. 51st St.
DALLAS . . . 3407 Main St.
LOS ANGELES 1110 S. Hope St.
PHILADELPHIA 97 E. Montana St.
PORTLAND 636 N. W. 16th Ave.
SAN FRANCISCO 424 Bryant St.
TORONTO, ONTARIO, CANADA
The S. K. Wellman Co., of Canada, Ltd. 2839 Dufferin St.

Quiz Answers

See page 22

1. This program will cover $125,000,000 for trucks, cars and spare parts.

2. A total of 17,500 motor vehicles will be purchased.

3. Total cost of vehicles purchased will be $83,000,000.

4. Spare parts for these units will cost $42,485,000.

5. Cost of the average heavier trucks will amount to $42,241,500 or an average cost of $6300 each.

6. 6320 of the ¼-ton trucks will be built at an average cost of $2500 each.

7. The ¾-ton jobs will cost $4300 each or a total of $11,450,900.

8. 589 of the 5-ton trucks will be constructed at an average cost of $19,000 each.

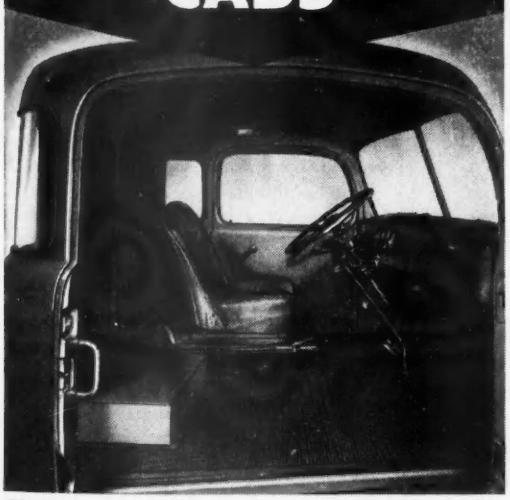
9. The sedans will average $1300 each for a total of $1,596,400.

10. The average truck pays special taxes exceeding $143 per year just for highway purposes, and this $143 *does not* include general taxes. Multiply this figure by 7,017,500 vehicles and you should get $1,003,502,500.

All-New and...

Built to Take It

THE INDUSTRY'S FINEST KING-SIZED CABS



Bigger, roomier, stronger, . . . larger doors, windows, windshields . . . built-in ventilation . . . complete insulation. 520 to 650 conventional models have full-width, three-passenger seats. C.O.E. and 700 to 980 conventionals have separate driver's seat with optional passenger seats.

If your city or inter-city hauling jobs call for heavy duty trucks, you'll find new "H" line GMCs the stand-out trucks of the field!

They're all-new in looks, with high attractiveness and attention value. And they're just as powerful, rugged and comfortable as they look . . . with bigger, better performing gasoline engines and improved Diesel engines . . . deeper, stiffer, better braced frames, Bumper-Built grilles and faster-acting brakes . . . higher, longer, wider cabs that have up to 50 per cent greater visibility, plus a score of new comfort and convenience features.

These new "H" line GMCs are offered in 61 basic models . . . in weight ratings from 19,000 to more than 90,000 pounds. See your GMC dealer for full facts on the best type for your type of heavy hauling.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

GMC

GASOLINE • DIESEL

TRUCKS

Fleetman's LIBRARY

CLEAN A TRUCK IN 20 MINUTES

Model JO De Luxe
Other Models as
low as $359

with HYPRESSURE Jenny STEAM CLEANER

● REDUCE MAINTENANCE TIME ● CUT OVERHEAD
● INCREASE PAY MILEAGE

Profit-minded fleet owners everywhere are reducing truck and bus "lay-up" time as much as 50% by Hypressure Jenny Steam Cleaning motors, chassis, parts, etc., before servicing or repair. Time saved in the shop means increased road mileage . . . greater profits.

By removing caked road dirt and grease, Hypressure Jenny Steam Cleaning lessens fire hazards . . . saves labor repair and maintenance time, and often prevents costly road failures by exposing worn or damaged parts before break-downs occur.

Besides these savings, Hypressure Jenny cleans garages, repair shops, equipment, tools, grease racks, runways, floors, walls, windows, etc., 10 times faster than they can be cleaned by hand.

WRITE FOR THIS FREE BOOKLET
"1001 Ways to Extra Profits."

It tells how Hypressure Jenny will help you keep your fleet rolling and earning.

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING COMPANY
"Serving Since 1892"
P. O. BOX 90 CORAOPOLIS, PA.

AUTOMOTIVE BEARING CATALOG, a 32-page publication listing connecting rod, main and camshaft bearings and piston pin bushings for all makes and models of cars and trucks. Johnson Bronze Co., New Castle, Pa.

FILTER CATALOG, a 36-page booklet listing specifications for the entire purolator line of filters and elements for all trucks, cars and other equipment. Purolator Products, Inc., Newark, N. J.

WHAT'S AHEAD FOR BUSINESS, a 4-page folder containing a digest of opinions of 378 industrial executives relative to business conditions for the remainder of the year. The Cleveland Chain & Mfg. Co., Cleveland, Ohio.

TRUCK SNOW PLOWS, a 24-page catalog showing design and construction of the complete line of Baker snow plows. Baker Mfg. Co., Springfield, Ill.

FWD SERVICE TOOLS, containing helpful hints on how to remove and install gears, bearings, parts on FWD as well as other makes of vehicles. Owatonna Tool Co., Owatonna, Minn.

HYPRESSURE JENNY STEAM CLEANERS, a 4-page leaflet describing the operation and construction of the new Service Master Series. Homestead Valve Mfg. Co., Coraopolis, Pa.

THOR SILVER LINE TOOLS, a 4-page circular listing and providing specifications and prices of the Thor Silver line of portable electric tools. Independent Pneumatic Tool Co., Aurora, Ill.

HART PARTS NEWS, a weekly subscription-free news letter for body builders issued by Hart Pressed Steel Corp., Elkhart, Ind.

OIL HOSE CATALOG, a publication illustrating and describing fittings, hose and couplings for gasoline and oil handling. The B. F. Goodrich Co., Akron, Ohio.

PLATECOIL, a bulletin showing how to install and maintain this new method of tank heating. Kold-Hold Mfg. Co., Lansing, Mich.

AUTO-LITE SILVER LINE, a 32-page, four-color catalog describing automotive wire and cable available from The Electric Auto-Lite Co., Merchandising Div., Toledo, Ohio.

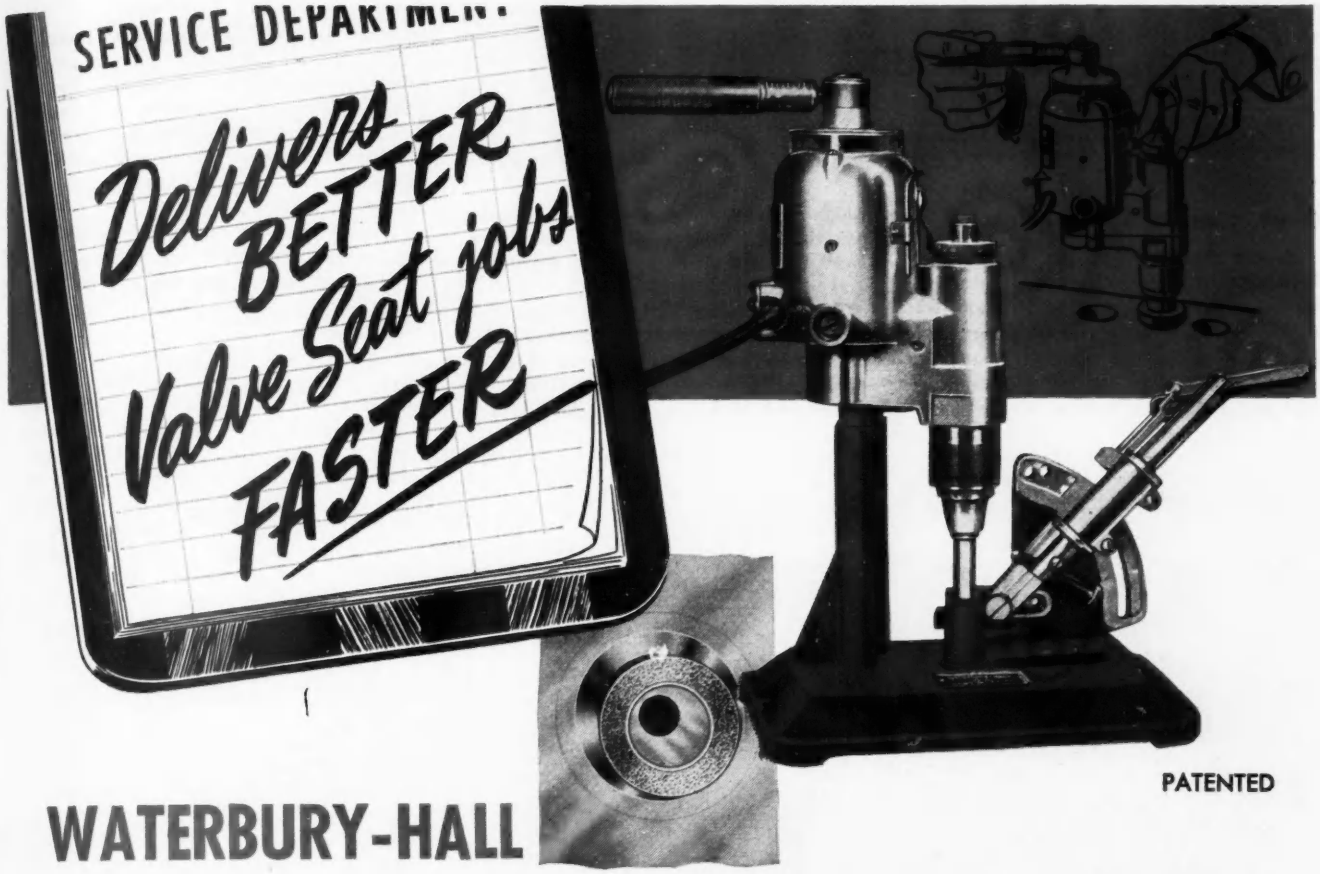
THE DEPENDABLE DIESEL, a 24-page magazine describing 30 years' development of the Cummins Diesel, with information concerning the use of this power plant for varied operations. Cummins Engine Co., Inc., Columbus, Ind.

NATIONAL PALLETS, illustrating and describing many types of wooden pallets made by National Pallet Corp., Pittsburgh, Pa.

UCON BRAND FLUIDS AND LUBRICANTS, describing the various types of Ucon polyalkylene glycol lubricants and the use of these products for the lubrication of machinery, engines, instruments. Carbide and Carbon Chemicals Corp., New York, N. Y.

HEAT-REM, a new data sheet describing use and application of this heat resisting aluminum paint. Speco, Inc., Cleveland, Ohio.

CHASSISLINER, a catalog containing specifications for Moog bolt kits and tire rod ends. Moog Industries, Inc., St. Louis, Mo.



PATENTED

WATERBURY-HALL MODEL EJ ECCENTRIC VALVE SEAT GRINDER

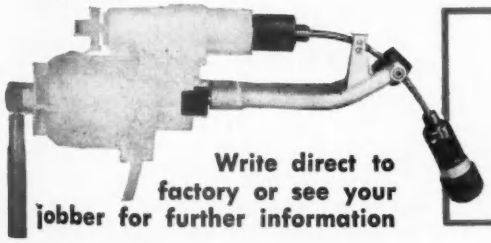
BETTER BECAUSE:

- It grinds eccentrically, on the point-contact grinding principle (see cut)
- It is micrometer-fed for accuracy
- Grindings are freely dispersed ahead of the wheel, minimizing jams and abrasion
- Perfect valve to valve seat sealing is assured

FASTER BECAUSE:

- Need for redressing the grinding wheel, and for raising and lowering the grinder, is reduced
- Grinding at 10,000 rpm, progressively around the seat at 20 rpm, makes for a fast, clean, accurate job *first time*

BETTER AND FASTER **work makes for a profitable shop. That's why the time you take to investigate the EJ will pay off, whether you sell the product or sell the service.**



Write direct to factory or see your jobber for further information

EJ GRINDER ANGLE DRIVE ATTACHMENT FOR ALL HARD-TO-REACH REAR VALVE SEATS

This attachment reaches rear valves, where cab is mounted over engine, or cowl overhangs. Simple to attach and operate. Special accessories available for servicing valves in Kaiser-Frazer engines. Makes for a complete valve seat job.

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Engine Rebuilding Equipment

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Division of Vickers Incorporated

708 East Aurora Street, Waterbury 91, Connecticut, U.S.A.

Manufacturers of Waterbury Engine Rebuilding Equipment
Also Waterbury-HALL Valve Equipment and Production Grinders

THE LINE OF LEAST RESISTANCE—WATERBURY-HALL

Washington Runaround

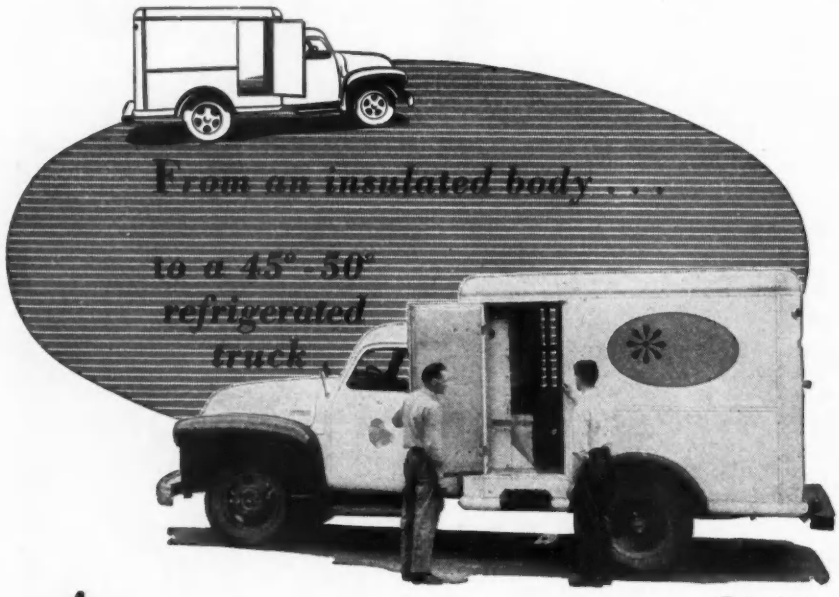
Continued from Page 30

Govt. Control of Fuel Prices?

Recent hearings before the Senate Banking Committee on the spring increases in the price of gasoline have again set in motion talk of eventual government control of motor fuel prices. There has always been a small, but not inconsequential group in the Federal Government, which feels that the producton and distribution of petroleum products is just as much a public utility as electricity or natural gas.

Primary reason for this kind of talk at the present time is the fact that the Committee and its staff were not too impressed with the case made for the price increases by the one major producer appearing at the hearings. The increases were justified largely on the grounds of the existence of large stocks of fuel oil which accumulated during the winter months, which were warmer than had been anticipated, making it necessary to increase gasoline prices so that an equitable profit could be obtained.

Meanwhile, a Senate Agriculture Subcommittee, headed by Sen. Gillette, Dem., Ia., is continuing its study of the possibility of reopening three government alcohol plants in order to expand the market for grain. The present direction of the study is aimed at using this alcohol as a gasoline blend or as a carburetor injection mixture. The Committee staff believes that a mixture of alcohol and regular grade gasoline would result in a high octane fuel without lead, the use of which, it is claimed, results in a higher price for premium gasoline than is justified by actual costs.



*Name on request

As simple as 1-2-3

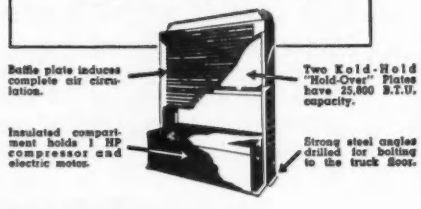
with KOLD-HOLD'S new Pakage truck unit

Hi-temperature refrigeration of perishables is achieved quickly, easily and economically through the installation of the new "Pakage" truck unit. This unit is a completely self-contained refrigeration system which you can install (see right) in from two to three hours without special body work, holders or brackets. It works well in any properly insulated body, regardless of age and it maintains a 45° to 50° temperature throughout the longest day's deliveries. The unit recharges itself by simply plugging in to any 110V outlet. 220V motor is available if desired. Write for the "Pakage" truck unit bulletin for information.

1. Cut two holes in the floor of the truck for air intake and discharge. Dimensions and measurements come with the unit, as well as complete installation instructions.

2. Push the unit into position over the holes and bolt securely into place. This is all the installation required.

3. Plug into 110V outlet. Twenty foot rubber covered cord is supplied with the unit. If desired, a connection box may be installed outside the body for greater convenience.


Baffle plate induces complete air circulation.
Insulated compartment holds 1 HP compressor and electric motor.
Two Kold-Hold "Hold-Over" Plates have 25,800 B.T.U. capacity.
Strong steel angles drilled for bolting to the truck floor.

WRITE FOR THIS FREE LITERATURE!
Efficient Truck Refrigeration, "Pakage" Truck Unit, and separate bulletins on Truck Refrigeration for Meat, Milk, Ice Cream and Frozen Foods.

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protects every step of the way

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U. S. Highway Needs 11 Billion

The Bureau of Public Roads has submitted to Congress, via the White House, a report on what the BPR estimates is needed to put the 40,000 mile Interstate Highway System into condition to handle modern traffic.

This system is the so-called primary network involving about 38,000 miles of main roads with 2000 to be added. It connects 182 of the 199 cities of 50,000 population or more as well as hundreds of smaller municipalities.

The BPR estimates, on the basis of 1948 costs, that $11.2 billion, spent at the rate of not less than $500 million annually, will be required to improve the primary system sufficiently to carry modern traffic loads.

"All but about 2300 miles of the interstate system require improvements to bring these systems up to standards recommended for existing traffic," says the BPR. "Of 10,150 bridges checked, only 483 are completely adequate."

Inauguration of such a program is certain to encounter sharp Congressional debate, perhaps not so much in the way of how much money as in what way it is to be spent and how much the States could contribute. One of the questions might be: should the money be concentrated on primary roads?

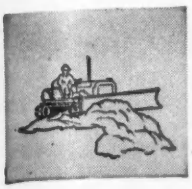
Highway expenditures this year for all types of roads are expected to climb to the $1.8 billion mark and presumably will be spread equitably among all types of roads.

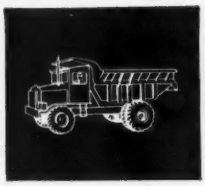
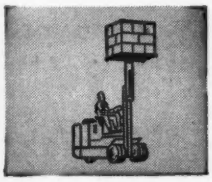
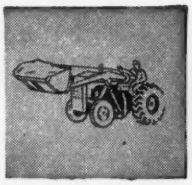
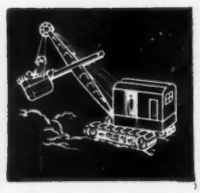
But the BPR holds that primary roads are of first importance largely because of interstate aspects as well as importance to national defense. The agency goes so far as to suggest that in view of these facts, the federal contribution should be more than the "normal 50 per cent" usually authorized.

BPR in a Shuffle

Ultimate resting place of the Bureau of the Public Roads, formerly the Public

(TURN TO PAGE 152, PLEASE)



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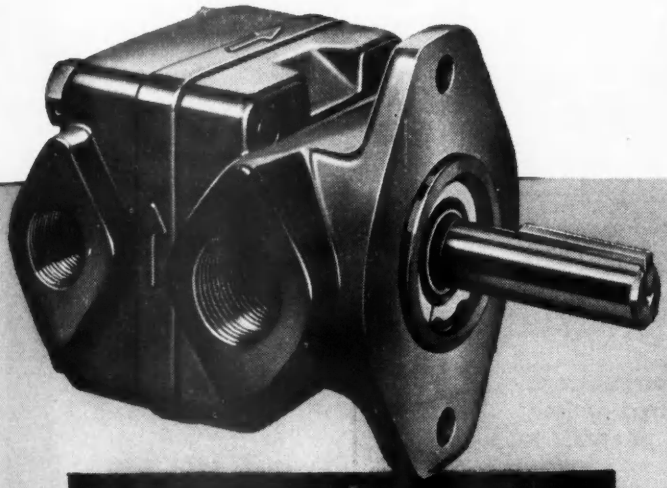
the NEW series V-200

VICKERS

BALANCED VANE PUMP



THE ONLY PUMP THAT AUTOMATICALLY MAINTAINS CORRECT RADIAL AND LATERAL CLEARANCES AT ALL TIMES

The rigorous job requirements of construction, agricultural, automotive and materials handling machinery have long pointed out the need for a hydraulic pump expressly designed for this service. The new Vickers V-200 Balanced Vane Pump has been designed and developed to meet these requirements with the usual Vickers high quality workmanship . . . all adding up to the "Best Pump Value" for this industry.

Longer life at maximum efficiency, far in excess of fixed clearance pumps, is assured as the Vickers Pump is the only pump designed to maintain both radial and lateral running clearances at all times. Not only is normal wear perfectly compensated, the pump even automatically adjusts its clearances to oil viscosity variations resulting from temperature change. As a result, correct clearances are maintained and more oil is delivered for useful work.

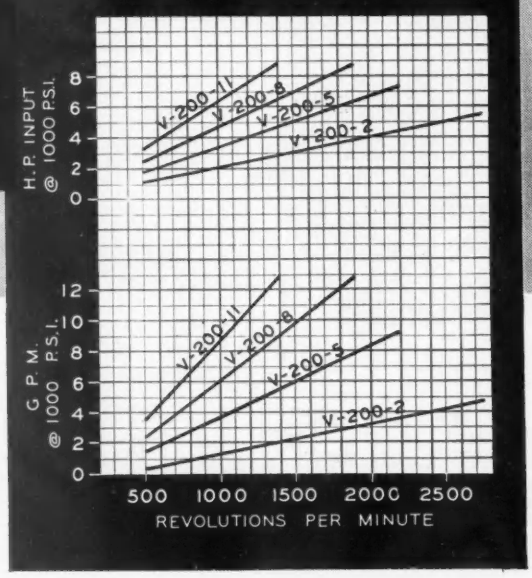
For many installations the nominal rated capacity of the pump is adequate, making it unnecessary to select the next larger size to provide additional capacity to compensate for loss due to high operating pressures, increased temperatures or normal wear. Thus, in many cases, a smaller pump can be used resulting in a more compact, efficient, and economical installation.

The tried and proven Vickers feature of "hydraulic balance" eliminates bearing loads resulting from pressure. The vane principle provides for no-load starting . . . important in cold weather cranking. Greater mounting adaptability is another advantage.

For better service, much longer life, with maximum efficiency all the way . . . you need Vickers V-200 Pump on your mobile equipment. Write for Bulletin 49-52.

AVAILABLE IN FOUR CAPACITIES WITH THE SAME EXTERIOR DIMENSIONS

TYPICAL PERFORMANCE CURVES



Write for **NEW BULLETIN 49-52**

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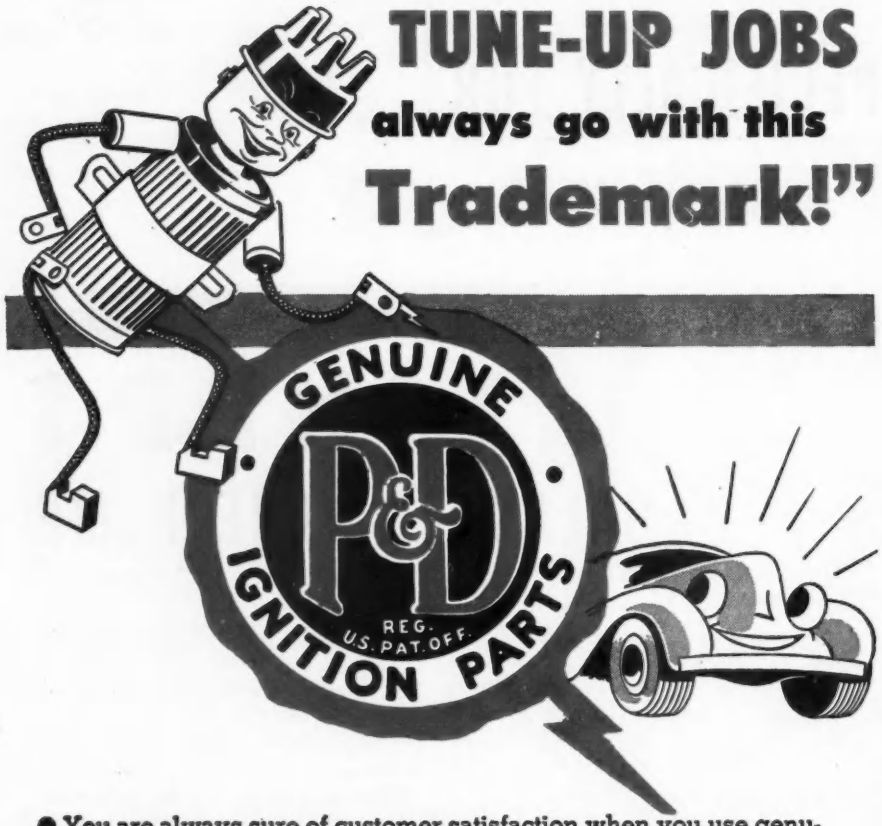
FUEL PUMPS • CARBURETOR KITS • AIR COOLED COILS

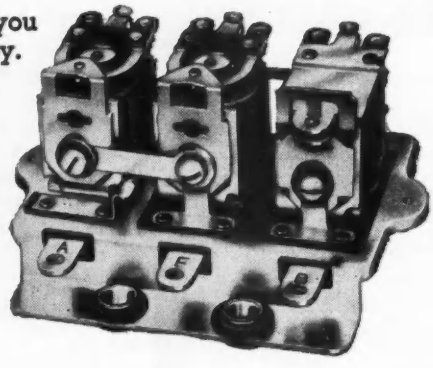
PEEDEE says... "TOPNOTCH TUNE-UP JOBS always go with this Trademark!"



● You are always sure of customer satisfaction when you use genuine P&D products. That's because they are manufactured entirely in our modern plant *from raw materials to finished products* to assure long, dependable service.

The P&D voltage regulator is typical of the expert automotive engineering, finest materials, and skilled workmanship that go into all P&D parts. See the large size insulated copper magnet wire that gives the windings maximum electrical stability. Next, notice the insulation. It's made of the best laminated phenolic plate available. And the contact points are the integral type . . . built to resist pitting. The riveting shank and contact proper are especially designed to provide minimum and unvarying electrical resistance between contact and mounting.

Yes sir — P&D parts are the best you can handle to keep customers happy. Write today for your free copy of the new Catalog No. 49 giving full information on P&D brushes, bushings, cut-outs, distributor products, etc. — the *one complete line* of electrical parts for all vehicles.



Turn Out Better Tune-up Jobs With PeeDee

P&D MANUFACTURING COMPANY, INC.
LONG ISLAND CITY 5, N. Y.

Washington Runaround

Continued from Page 150

Roads Administration, was still undecided as this issue went to the printers. Incorporated in the new General Services Administration, under a recently enacted law, the BPR is slated for transfer to the Dept. of Commerce under a reorganization plan submitted to the Congress by President Truman. BPR will go to the Commerce Dept. late this month unless either House of Congress vetoes the move. Critics of BPR are pleased with the prospects of the transfer to Commerce, pointing out that BPR will be forced to take a broader view of highway problems than has been the case in the past. . . .The staff of the Senate Interstate Commerce Subcommittee conducting an investigation of domestic surface transportation reports that its preliminary task of gathering basic data is proceeding satisfactorily. Facts and figures never before assembled, particularly those affecting motor and water carriers, are beginning to reach the committee. The staff director reports excellent cooperation from the various associations and a surprising interest on the part of colleges and universities. . . . The long-awaited revision of the ICC motor carrier safety laws is still a long way from the public hearing stage. The second draft has now been returned to the Section of Safety for a technical check to bring the draft up-to-date since it has been many months since the Section originally completed its revision.

R-B Act May be Repealed

A congressional committee is talking about legislation to repeal the Reed-Bulwinkle Act, but don't expect such a move to get beyond the talking stage this year.

Next year, however, may be a different story. It is probable that a sizable bloc of congressmen will try to force repeal of the measure in 1950. Led by a group of Administration stalwarts, this group of so-called "pure competition" theorists is already laying the groundwork for repeal.

END

(Please resume your reading on P. 35)

DeSoto Carry-All Sedan

The De Soto Carry-All sedan, a 4-door sedan that can be transformed in a moment into a utility car, is now in production and being shipped to De Soto-Plymouth dealers. The rear seat of this sedan can be quickly and easily folded down to the floor, providing nearly 8 ft of cargo space. Factory retail price is $2,075

NATURE'S BEST IS TOUGH TO BEAT

FARMERS COULD SPEND ALL DAY WEEDING, BUT MILKWEED WOULD STILL ENGULF THE EARTH... WERE IT NOT FOR THE BROWN MONARCH BUTTERFLY WHICH DEVOURS IT IN HUGE QUANTITIES. IF YOU ATE AS MUCH, YOU'D GULP 100 LBS. AT A MEAL! SCIENCE HASN'T INVENTED THE WEED KILLER THAT'S A MATCH FOR THIS BUTTERFLY!

WORLD'S FIRST DRILLED OIL WELL —THE DRAKE WELL—TITUSVILLE, PA.

AND

VEEDOL 90 H.D.

STAYS UNSURPASSED BECAUSE VEEDOL USES ONLY

NATURE'S TOUGHEST CRUDE

Instead of trying to improve on an inferior crude, Tide Water Associated starts the production of VEEDOL 90 H.D. with nature's toughest — the unsurpassable crude found in the area of Bradford, Pa. When it comes to oil, remember that *nature's toughest STAYS the toughest, and nature's toughest STANDS the toughest beating under brutal, heavy-duty conditions.*

VEEDOL 90 H.D., being naturally tougher, is naturally more resistant to heat and wear. That's why VEEDOL 90 H.D. can give that famous fighting "Film of Protection," to guarantee increased mileage between overhauls.

VEEDOL
OILS AND GREASES

FEDERAL TIRES
"GOOD FOR A LONG SAFE RIDE"

TIDE WATER ASSOCIATED OIL COMPANY

NATURE PLUS! MAN-MADE ADDITIVES WORK MIRACLES IN VEEDOL 90 H.D.!

VEEDOL 90 H.D. is a compound of scientifically selected additives, blended perfectly in naturally stable Bradford, Pennsylvania, oil, to reduce sludge and gum formation, protect bearings from corrosion, minimize lacquering of pistons and valve stems ... all with full-throttle operation.

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90 H.D. Motor Oil ... Cleans as you Drive

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New Products

Continued from Page 52

leverage, operates with ease. The self-centering spinner automatically produces accurate flares of uniform width. Smooth, hardened steel jaws prevent scoring of tubing and all jaw sizes are clearly marked on the underside of the tool. E. Edelmann and Co., Chicago, Ill.

P91. Electric Tools

The new line of Thor "Silver Line" portable electric saws, features long-shaft transverse motor mounting for extra power and long tool life.

Six new models are available in 6, 7, 8, 9, 10 and 12-in. sizes. Features include die cast aluminum housings, steel inserts for bearings, built-in saw blower, steel rip guide with adjustments for any thickness of material being cut. Independent Pneumatic Tool Co., Aurora, Ill.

P92. Directional Signals

New flat-back directional signal lamps are designed for mounting flat against the truck body. Lamps have lucite lenses to provide greater visibility, durability and resistance to shatter. Lamps measure four in. in diameter, and are equipped with 21 C.P. single-contact bulbs. Units are easily mounted by drilling three small holes. The Signal Stat. Corp., Brooklyn, N. Y.

NASH BODY-GARD BUMPERS

CUSTOM BUILT FROM HI-TENSILE STEEL

Channel Type Construction

FOR NEW EQUIPMENT OR REPLACEMENT ON TRUCKS, BUSES, COACHES AND ALL TYPES OF COMMERCIAL TRUCK BODIES

Stamped from rugged HI-TENSILE steel, Nash Body-Gard Bumpers are designed to fit and protect the front and rear of all types of trucks, truck bodies, buses and coaches. Due to flexible tooling and equipment, they can be made to your exact specifications and at economical prices. The style and size Body-Gard Bumper you order can be shipped promptly.

Body-Gard Bumpers meet a need long felt by the entire industry. They are styled to improve any vehicle's appearance and are built to provide maximum protection with minimum weight.

Send for folder which describes how the Body-Gard line will help you solve your bumper problems.

5 FACE WIDTHS

3½", 4½", 5½", 6" and 6⅝" wide

3 STYLES

REGULAR
With 3⅜" end form

FULL
With end form up to 7½"

WRAP AROUND
End form as deep as required

PROMPT DELIVERY • LOW COST

NASH BROS. COMPANY

Manufacturers of Nash Tire Carriers

PAYNE STREET AND DEWEY AVENUE, EVANSTON, ILLINOIS

Late Product Flashes

Electric Auto-Lite Co., Toledo, Ohio—Flextrand, an automotive primary wire featuring additional strands of wire with a special lacquer waterproofing—recommended for lighting systems.

J. H. Williams & Co., Buffalo, N. Y., a new line of diagonal cutting pliers in 6- and 7-in. sizes. Pliers are made of high carbon steel with jaws hardened by electronically-controlled heat treatment.

Commonwealth Carburetor Corp., Berkeley, Cal., the Octagane Water Injector designed on the venturi principle to inject water into the intake manifold.

Pennsylvania Rubber Co., Jeannette, Pa., a new low-priced standard tire added to the passenger car line.

Cummins Portable Tools, Chicago, Ill., three new streamlined ¼-in. general utility drills for shop use.

Ken Tool Mfg. Co., Akron, Ohio, Service Tool Board, T-250, containing all the needed tools for heavy-duty truck tire service.

P93. Lift Kit

A new lift kit designed to expedite all grappling operations with safety has just been developed.

Weight distribution and balance combined with positive attachment through eye-bolts and eye-nuts direct to the unit being lifted, are principles of the lift. Eye-bolts and eye-nuts are stamped to show safe load limits. Parts are specially hardened and cadmium plated. Clayborne Mfg. Co., Chicago 16, Ill.

P94. Plastic Upholstery

A new nylon-stabilized plastic upholstery material for commercial transport vehicles called Textilco is an all-plastic vinyl reinforced with

(TURN TO PAGE 156, PLEASE)

Best connection for fast service on fine parts

Your NAPA Jobber is a Good Man to Know!

Once you've acquainted your NAPA Jobber with your vehicles and their requirements, *one phone call* connects you with the fastest, most comprehensive parts service available.

From his own stocks, your NAPA Jobber can meet the vast majority of your normal parts requirements —for cars, trucks and buses of practically any make.

In emergencies involving hard-to-get parts, your NAPA Jobber can generally give overnight service or better by drawing on master stocks in the nearby NAPA Warehouse.

The famous lines, shown below, are specified by vehicle manufacturers in many cases as original equipment. In every case, *all* NAPA lines meet the highest standards of quality.

Check up now on the advantages of doing business with your NAPA Jobber, and the nation's largest independent parts organization.

Ask your NAPA Jobber to explain how he can save you time, simplify your parts problems and help keep your trucks rolling on schedule.

N·A·P·A
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N·A·P·A *is the largest Independent Parts Organization in the Industry!*

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UNITED PARTS — FUEL PUMP, HYDRAULIC BRAKE SPEEDOMETER and BRAKE CABLES
Monmouth — ENGINE BEARINGS, CLUTCH PLATES & PARTS, CHASSIS PARTS
STANDARD — GREASE RETAINERS
Allied — GRAPHO — WATER PUMPS, PARTS • PACKING
BROWN LIPE — GEAR BOXES
Bufialo — MUFFLERS
BRIGGS — SHOCK ABSORBERS
Allied — PRECISION — PISTON PINS
Allied — A.P.C. — VALVES
ECHLIN — IGNITION PARTS
DETROIT — UNIVERSAL JOINTS
MicroTest — GEARS • AXLE SHAFTS
BALKAMP — PARTS FOR FORD, CHEVROLET • PLYMOUTH AND ALL POPULAR CARS
RARITAN — ROLLER BEARINGS
Allied — RAYMOND — VALVE SPRINGS
TRICO — VACUUM OPERATED SAFETY PRODUCTS
PURITAN — BRAKE FLUID, SHOCK ABSORBER OIL, FLUSHING FLUID, GASKA SEALS
ZOLLNER — PISTON EQUIPMENT
BUFFALO — FIRE EXTINGUISHERS
DUCKWORTH — TIMING CHAINS
Thomson — THERMOSTATS
CELORON — TIMING GEARS
DITTMER — TRANSMISSION GEARS
MARTIN-SENOUR — AUTOMOTIVE FINISHES
Belden — WIRE AND CABLE
New Britain — HAND TOOLS
FEDERAL — BALL BEARINGS
Spicer — UNIVERSAL JOINTS

New Products

Continued from Page 154

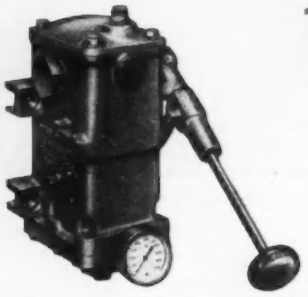
nylon woven fabric which is imbedded in the film itself. By this method high tensile strength and tear resistance are said to be achieved. Texileather Corp., Toledo, Ohio.

P95. Brake Cylinder Hone

This new brake cylinder surfacing hone allows complete end to end surfacing of all car wheel and master brake cylinders. It has a range of ¾ in. to 1½ in.

One type, size, and grit of stone covers all brake cylinder surfacing needs, with only one simple lock ring adjustment needed to adapt the hone to any cylinder. Operated by any ¼-in. electric drill, the new surfacing tool hones cylinders on or off the vehicle, cleaning up all corroded, rough, pitted or scratched cylinder walls. Ammco Tools, Inc., North Chicago, Ill.

CARELESSLY *Tossed* — BOOM!



The hydraulic operator which opens the valves.

Hydraulic Internal Safety Valves are installed inside the tank and are normally closed under spring tension.

"WE SAVED THOUSANDS OF DOLLARS BY CONVERTING TO AMAZING TRAILMOBILE TANDEMS!"

... say fleet operators across the nation!

You, too, can...

Save on your initial conversion cost by converting to Trailmobile Tandems!

Save by increasing your per-trailer payload up to 50%!

Save by reducing your capital investment . . . Trailmobile Tandems eliminate need for more trailers to increase payload!

Save in sensationally reduced overhaul and layup costs . . . because . . .

YOUR OVERHAUL COSTS NOW NEED NOT EXCEED $59.50*!

• These remarkable facts are absolute . . . every single one of them! The conversion of your single-axle trailers to Trailmobile Tandems brings you wonderful new operating efficiency . . . backed up by tremendous savings. The increase in payload alone assures you of greatly added profits-per-trip. Now add to this the advantages of minimum maintenance with Trailmobile Tandems and you get the true money-saving picture. Only TWO MOVING PARTS (the famous Trailmobile "Rocking Beams") mean absence of complex mechanism; lubrication needed at only *two* points. Constantly equalized braking force with brake chatter eliminated . . . maximum tire mileage, no undue scuffing or cupping.

And you have a smaller parts inventory, since Trailmobile Standardized Parts are interchangeable with single-axle suspension and are available everywhere at the sign of Trailmobile. **Investigate now! Any Trailmobile sales and service headquarters can convert your trailer to a Trailmobile Tandem in mere hours . . . *at low cost!***

TANDEM ROCKING BEAMS (Only two moving parts) . . . heart of the Trailmobile Tandem, wherein lies the secret of its sensational operation!

*Maximum cost of $59.50 for reshafting and rebushing the only two wearing parts of the tandem unit.

Write for Complete Information on the Trailmobile Conversion Story!

THE TRAILMOBILE COMPANY

Cincinnati 9, Ohio • Berkeley 2, California

MAIL THIS COUPON!

THE TRAILMOBILE COMPANY
31st and Robertson Ave., Cincinnati 9, Ohio

I am very interested in converting my trailers to Trailmobile Tandems. Please send me complete descriptive information.

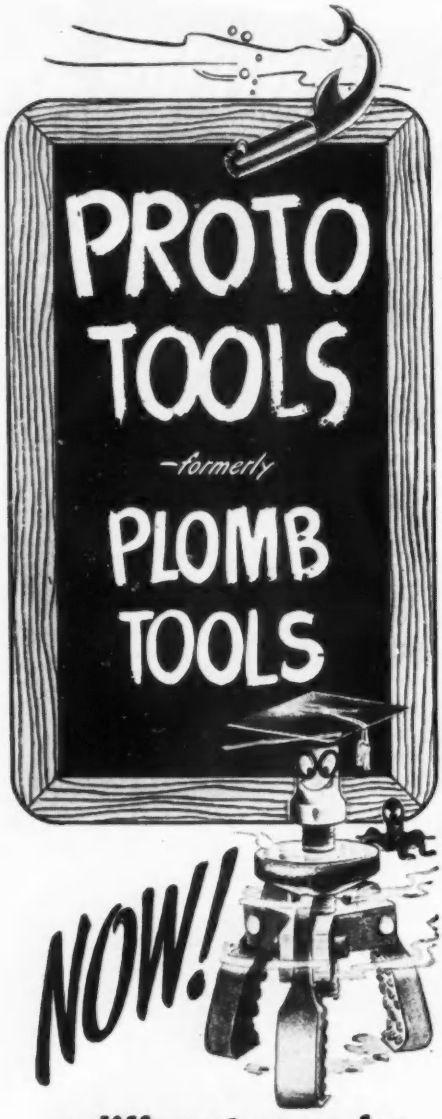
Name.....

Company.....

Business Address.....

City.....*State*.....

My Position.....



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TOOLS
LOS ANGELES

New Products

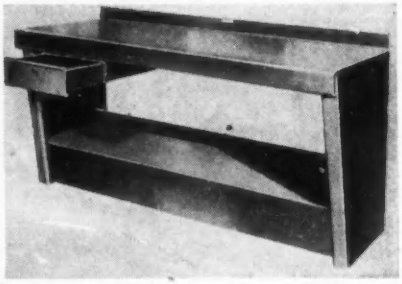
Continued from Page 156

ly balanced, forged crankshaft, forged connecting rods with automotive type prefit bearings, frictionless ball type main bearings, tapered mounting for balanced flywheel, extra large inter- and after-coolers, removable cylinder blocks and valve assemblies.

Outfits are available to operate from all common electrical currents and are supplied to meet code requirements of different cities and states. The DeVilbiss Co., Toledo, Ohio.

P99. Steel Work Bench

A new style work bench features a 12-gage steel top, streamlined design and generous size. It is 6 ft long, 34 high, and 28 in. deep. Legs are sloped back so that there is no stumbling; electrical knockouts for double outlets are provided in the



front of each leg just below the top; back rails keep items from rolling off the top or shelf of bench; drawer is pilfer-proof and mounted on rollers. Equipto Division, Aurora Equipment Co., Aurora, Ill.

P100. Cherry Rivets

The new CKR series of Cherry Rivets is designed for heavy gage sheet metal fastening jobs. Called "Blind Thread" Rivets, the CKR series is available as a standard line in ¼, 5/16, and ⅜-in. diameters and in grip lengths from ⅛ to ¾ in. The Rivet material is steel. The head style is protruding.

The "Blind Thread" Rivets are installed from one side of the job by one man. The tool used is an automatic screwdriver fitted with a Cherry Adapter which has interchangeable tips that take care of the three diameters of rivet supplied in the "Blind Thread" series. Cherry Rivet Co., Los Angeles, Calif.

END

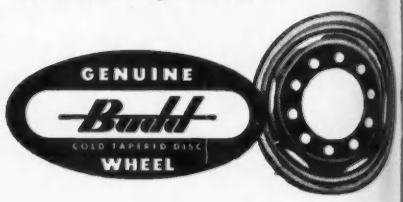
(Please resume your reading on P. 65)

All Budd Wheel distributors can provide the same kind of service illustrated on the opposite page

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Cruse-Crawford Wheel & Rim Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
FARGO—Wheel Service Company
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Wheel & Rim Co.
HARTFORD—Connecticut Whee & Rim Co.
HOUSTON—Southwest Wheel Inc
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MINNEAPOLIS—Wheel Service Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Company
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees, Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel, Inc.
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees, Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees, Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.

EXPORT
CLEVELAND—C. O. Brandes, Inc.

CANADA
CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—General Auto Equipment Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.



RIGHT FROM THE START!

Mr. K. F. Schmitt, of the Auto Wheel and Rim Service Co., Budd Wheel distributors in Louisville, Kentucky, writes, "In March 1948, the Ballard and Ballard Co., millers of Obelisk flour, decided to expand their fleet facilities to make out-of-state deliveries. Upon our recommendation, they specified the proper rim and tire combinations on their first six tractors and trailers.

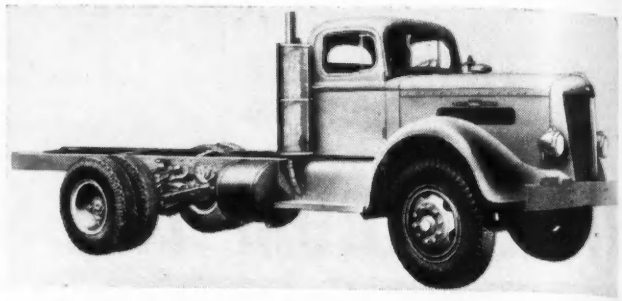
"Carrying a gross weight of approximately twenty tons, our vehicles operated on tough hauling jobs with a minimum of tire trouble... tire mileage was 25% higher than we had even anticipated... and more than 80% of our tires were in good enough condition to be recapped."

Mr. Schmitt goes on to say, "From the original six tractors and trailers the fleet has grown steadily—today 53 Ballard and Ballard units are operating at top-notch efficiency, thanks to Budd Wheels!"

Before purchasing new equipment, check rim and tire combinations with your nearby Budd distributor, whose name you'll find on the opposite page. He knows his business and with Budd Wheels he offers the *only* complete line with the new tapered bead seat rims. The Budd Company, Detroit 14.

WHITE DIESELS

Use Cummins Engine



WHITE Motor Co. has announced a complete new line of diesel trucks powered by the Cummins NHB-600 engine. The complete line of trucks and 6-wheel models includes the WC-28D, with wheelbase ranges from 134 to 224 in.; the WC-32D in wheelbases from 146 to 224 in.; the WC-286D 6-wheel unit in wheelbases from 176 to 245 in. White-Diesel tractor models include the WC-28TD, in wheelbases from 134 to 158 in.; and the WC-2864TD 6-wheel unit in wheelbases from 158 to 176 in.

The Cummins engine develops 200 hp at 2100 rpm and a torque of 535 lb ft at 1200 rpm. Fuel system includes tractor oil bath type air cleaner and fuel tank of 44-gal capacity. The cooling system makes use of a centrifugal design water pump with full by-pass thermostat and total radiator and engine capacity of 38 qts. Starting motor is of the 24-volt, straight drive type, and the generator is the 12-volt, 50 ampere type with current and voltage regulation.

A Spicer two-plate 14-in. clutch with clutch brake is used, and the Fuller model transmission with ten forward and two reverse speeds is employed.

Standard specifications include a front axle of the 12D Reverse-Elliot type and rear axle of the single reduction, full-floating type with gear ratios of 5.57. Propeller shafts are of the Spicer, needle bearing, 1800 series. Service brakes are of the four-wheel, internal expanding, air-operating type for the four-wheel units, and six-wheel type for the six-wheel trucks and tractors. A four-shoe disc hand brake, mounted on the frame at the rear of the transmission, is used. The frame of the chassis is of the single channel type, made of chrome nickel steel, SAE 3125, heat treated.

In addition to its regular diesel line, The White Motor Company also puts out a line of "Western Diesel" models, similar to the standard truck and tractor models but having special transmission and auxiliary transmission to provide additional gear reduction. These are designed to meet the special requirements of the eleven western states.

HEIN-WERNER
Gives You
THE MOST TRUCK JACK
FOR YOUR MONEY
at these low prices!

MODEL	CAPACITY	PRICE
E3.9A	3 Tons	$10.65
E5.9A	5 Tons	12.80
E8.9A	8 Tons	14.65
E12.9A	12 Tons	19.25
20.10AA	20 Tons	32.50

Hein-Werner Hydraulic Jacks are better built from ram-head to base to give you the greatest value in both performance and price. Feature for feature, you'll find Hein-Werner offers you more for your dollar than any other jack. Available for immediate delivery — order through your Hein-Werner jobber today!

Made in models of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity as well as service jacks for shop use and Bumper-Lifts for passenger cars.

IMMEDIATE SHIPMENT

HEIN-WERNER CORPORATION • Waukesha, Wisconsin

★★★★★★★★★★★★★★★★★★★★★★★★★★

SLOWGAN

Epitaph: "He sped to an early grave, never to enjoy the time he saved.

JOBSERVATION

Jack is another name for money because it lifts a load off ones shoulders.

★★★★★★★★★★★★★★★★★★★★★★★★★★

more than seven thousand items

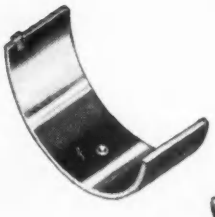
THE COMPLETE ENGINE
FEDERAL Mogul
BEARING SERVICE

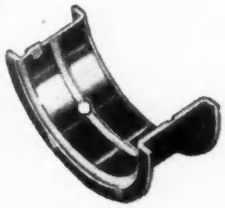
Your Federal-Mogul jobber has everything you need for the engine bearing assembly. Call on him for all your engine bearing needs, from single bearing numbers to accurately reconditioned connecting rods.

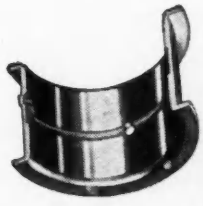
Depend on the 100% complete engine bearing line to help you put FINE PERFORMANCE back into reconditioned engines!

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN

Engine Bearings (Main, Connecting Rod and Camshaft) • Bushings • Connecting Rod Exchange • Reconditioned Connecting Rods • Rebabbitted Connecting Rods • Connecting Rod Bolts and Nuts • V-Seam Piston Pin Bushings • Bearing Metals • Laminated Shims • Solders

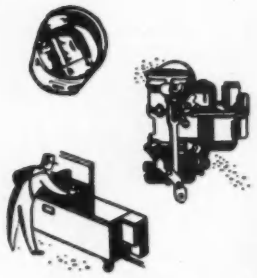






1899—FIFTY YEARS OF CONTINUOUS BEARING EXPERIENCE—1949

7 STRONG REASONS WHY YOU SHOULD USE MAGNUS 755



It's a *Multi-Purpose* Cleaner

1. Removes the most stubborn carbonized oil deposits from pistons, connecting rods, etc.
2. Cleans carburetors, oil, fuel and water pumps quickly and thoroughly without hand work.
3. Cleans all other dismantled engine parts.
4. Desludges engines without dismantling.

It's a *Thorough* Cleaner in *Cold or Hot* Solution

5. Works well in cold, still tanks; faster and better in warm solution, but speediest and most thoroughly of all in Magnus Aja-Dip Cleaning Machines.

It's a *Lasting* Cleaner

6. When other cleaners of this type are exhausted, Magnus 755 solutions are still going strong, with months of service life remaining.

It's a *Safe* Cleaner

7. Non-toxic, non-corrosive. Safe for *all* metals, and harmless to gaskets and packing.

It pays to stock up with Magnus 755. It is speedier, more thorough and more economical than any other cleaner on many cleaning jobs.

MAGNUS CHEMICAL COMPANY ● 38 South Ave., Garwood, N. J.

In Canada—Magnus Chemicals, Ltd., 4040 Rue Masson, Montreal 36, Que.

Service representatives in principal cities

Answers to Time Out for Play

Brain Teaser, Page 22

Hidden Parts

I don't know how *he el*uded the policeman who started to ru*sh af*ter him, but, somehow, he es*cape*d.

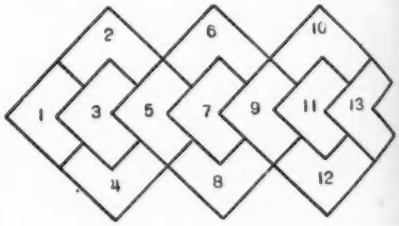
As one of his country's de*fender*s he had been drafted while still a *stud*ent and had wound up on a na*val* ve*s*sel as a member of the admiral's *crew*.

She plunged a*head light*heartedly, her blon*d rum*pled hair in the wind, a nea*t ank*le showing from under her skirt, a *spring* to her step. No, indeed! You could never forge*t Ir*ene.

Don't forget to pay the t*ax le*vied by the country, i*f any*. Your last chance to pay u*p is to*night.

He made a t*hin ge*sture, su*ch as s*issies make when they are afraid, but a moment later he was watching his opponent like a co*bra ke*eps watching his prey, and his fists began pounding *ear*nestly in the other's face. In the end he gave anything but a *bum per*formance, leaving everyone i*n ut*ter amazement at the change in him.

Angleville

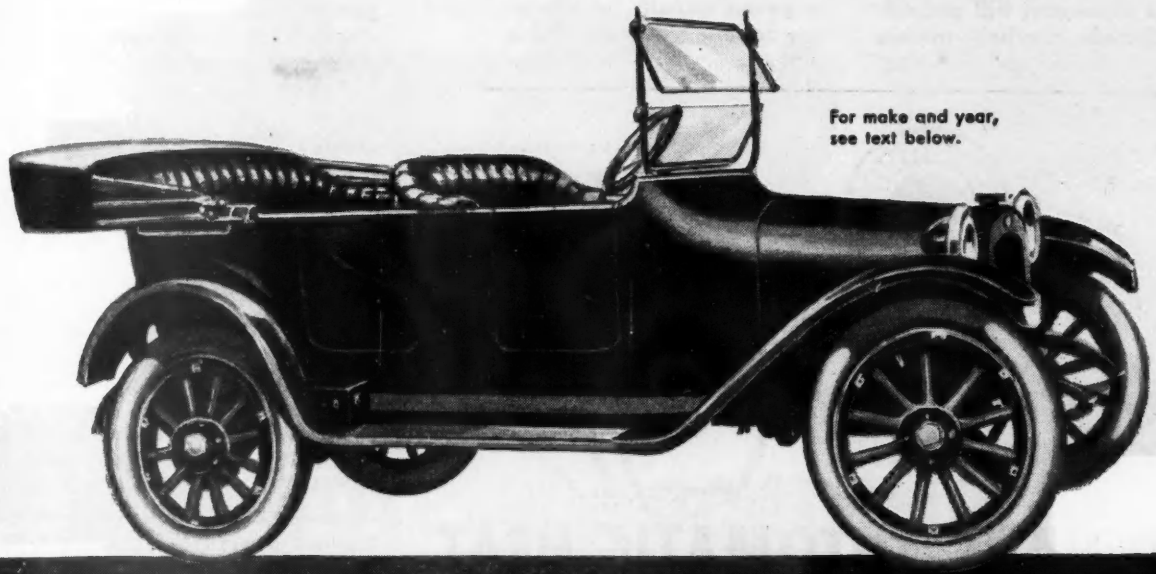


Bus-Truck Makes Debut

Recently delivered to Northern Pacific Transport Co. by Kenworth Motor Truck Corp. of Seattle is this newly developed vehicle, a combination bus and truck. This unusual vehicle is being operated out of Billings, Mont., to supplement short line rail service. It accommodates 17 passengers and provides freight carrying space of 18 by 8 ft. F. R. Meehan, superintendent of Northern Pacific Transport, is credited with coming up with the original idea, which was further developed by Kenworth engineers. The bus-truck is equipped with a Hall-Scott horizontal engine

can you recall this

OLD TIMER?



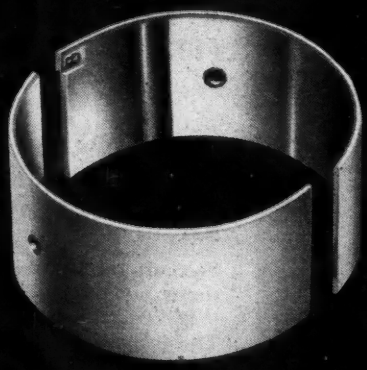
For make and year, see text below.

CLAWSON & BALS

AN OLD TIMER IN AUTOMOTIVE PARTS BRINGS YOU COMPLETE ENGINE BEARING SERVICE

Just a few years after this Dodge appeared in 1915, Clawson & Bals, another "old timer", began supplying Genuine "Ring-True" automotive parts. During this period of more than thirty years Genuine "Ring-True" parts have continued to be the *finest* made! Finest in design, materials, and workmanship. See the *complete* line, as illustrated below, at your C & B Jobber. Clawson & Bals, Inc., 2508 South Michigan Ave., Chicago 16. Export Department, 431 South Dearborn Street, Chicago 5.

The famous C & B Engine Bearing Manual is now available in a completely new edition containing 120 pages of useful text, pictures, and data. Write for your copy, giving your jobber's name.



IT TAKES EXPERIENCE
TO MAKE
THE FINEST PARTS

Genuine
RING-TRUE
C B
PRODUCTS

- Engine Bearings
- Rebabbitted and Reconditioned Connecting Rods
- Pistons and Pins
- Water Pumps and Repair Kits
- Spring Shackles
- Flexible Fuel and Oil Lines
- Hydraulic Brake Parts and Brake Hose
- Valve Springs
- Babbitt Metal
- Chevrolet Rod Dipper

What Price Horsepower?

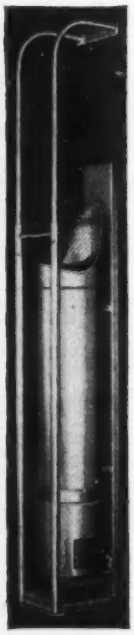
Continued from Page 87

sumed. Certainly the more powerful vehicles, properly engineered for the power increase, will have higher purchase prices and this will affect such time charges as interest, and insurance. But driver's wages, garaging, washing and polishing, painting, lubrication, inspection and adjustment will probably remain unaffected. Similarly, mileage charges, such as amortization, engine and chassis repairs and lubricating oil will be affected somewhat while other mileage charges, such as tires and maintenance of body and equipment should show no difference. Even fuel, which most people assume will be consumed in greater quantity by a larger engine may actually show no increase.

YOU
LIGHT THE PILOT
SET THE CONTROL . . .

AND HAVE AUTOMATIC HEAT

WITH CARGO-GUARD HEATER STAMPINGS



FIRST: light the pilot burner. Second: set the thermostat at desired temperature. From there on the *automatic* thermostat on CARGO GUARD maintains that temperature without the driver's attention. The propane gas supply is good for 2 to 5 days depending on weather conditions. Dial indicates when replacement is necessary. Now perishable loads can be pay-loads, for CARGO GUARD brings you through with your load *and your profit.*

CONVECTION HEAT WITH BOTTLED GAS

Convection heat is fastest acting, easiest to install, simplest to control. CARGO GUARD HEATER is rated at 20,000 Btu. Burner is located at base of unit. Re-circulating air produces a jet action which boosts a stream of warm protective air into the cargo area. Unit requires *only 1 sq. ft.* of floor space. Load Guide protects heater and prevents cargo shifting. Write today for complete details. Stampings, Inc., Davenport, Iowa.

INQUIRIES FROM TRUCK DEALERS AND TRUCK EQUIPMENT DISTRIBUTORS INVITED

THE CARGO GUARD HEATER IS A PRODUCT OF STAMPINGS
SPECIALISTS IN BOTTLED GAS PRODUCTS

Experience with larger powerplants in recent years has convinced many operators that the popular notion that fuel consumption is necessarily proportional to engine displacement is erroneous. An engine is not a fuel meter. There is not much difference in the fuel consumption per ton-mile per hour between different engine sizes. Long observation leads to the conclusion that fuel consumption for a given gross weight is proportional to swept volume per mile. That this does not spell greater consumption proportional to displacement is due to the fact that with more powerful engines, the prevailing gear-reduction is less and so the swept volume does not change materially.

Power enough to maintain an economic average speed or minimum speed on prevailing grades may be used to attain excessive speeds on level roads—particularly when running light. It is well known that for any combination of power, weight and engine speed there is a breaking point in gear ratios. Below this breaking point, the greater the reduction, the slower the maximum speed, regulated, of course by the governor. Above this breaking point, further decrease in reduction will not produce higher speed, but lower, since the required horsepower for the theoretical speed exceeds that developed by the engine.

If this phenomenon is deliberately exploited by going beyond the breaking point so that the actual maximum speed, loaded is about 10 per cent below the theoretical, maximum economy may be expected in normal operations; but the speed attainable empty may prove excessive. However, if there be still faster ratios beyond this point, it will be possible to restrict top speed at will, while at the same time reducing engine revolutions at the balancing point to effect still greater economy.

Weight of Driving Parts

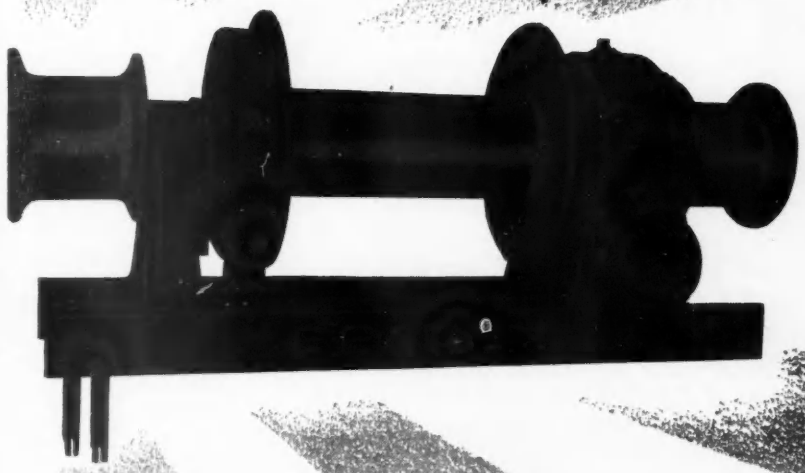
THAT higher-powered vehicles must be huskier throughout to withstand the greater torque loads imposed is the exaggerated prevalent impression. In the first place, torque does not necessarily increase with higher power. If high rotative speeds are the means of gaining power, then maximum torque might remain the same. Also, on the principle of Newton's Third Law, torque input will be limited by torque reaction which will be about the same where the same mass and basic tractive resistances are involved.

Recent practice in truck design bears out these observations. If transmissions, drive-shafts and rear axles had grown in size and weight propor-

(TURN TO PAGE 166, PLEASE)

ONLY BRADEN HAS

THE OIL-COOLED. . . FULLY ADJUSTABLE



AUTOMATIC

SAFETY BRAKE

assures safety of operation

The BRADEN Oil-Cooled, Fully Adjustable, Automatic Safety Brake is designed for sure-fire holding power in any emergency. It was perfected only after years of experimentation in the factory and use in actual operation. The oil cooling provides maximum cooling benefits, cuts down on brake lining wear, and assures safe braking action under all conditions.

Ask users about the BRADEN Oil-Cooled, Fully Adjustable, Automatic Safety Brake. They'll tell you it's the safest winch brake they ever used.

MODEL M12-18B
Load Rating - 25,000 lbs.

MODEL M12-18BY
Load Rating - 30,000 lbs.

They have the OIL COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE as standard equipment.

BUY BRADEN — They Are Safer

BRADEN WINCH COMPANY
1001 East Admiral Boulevard

BRADEN Winches

TULSA 3,
Oklahoma

What Price Horsepower?

Continued from Page 164

tionally with engine power increases, present-day high-powered trucks would indeed be monstrosities. Actually, for given gross ratings, trucks have not materially increased in weight, though elaboration and increased capacity of electrical, air, fuel and cab equipment alone might have justified appreciable weight increases.

Cost Penalties

OBVIOUSLY, though, if power increase is carried to extremes, then the margin of extra cost will go up decidedly. Practically all items will rise except body and equipment maintenance, for to carry the considerable extra weight entailed, and to conform with weight regulations, additional axles will be required which will affect such items as garage, washing and polishing, painting, lubrication, inspection and adjustment and tires. Driver's wages, too, will undoubtedly increase; certainly fuel consumption will rise.

Among the economic considerations which must govern the extent and rapidity with which the trend toward larger powerplants will develop, that of purchase price cannot be ignored. Development of engines of radically greater power than prevailing today takes time and very large investments in engineering, research, trial and tooling. Radical increases of power will mean radical cost penalties. They will also necessitate hurried and provisional engineering. Practically all trucks of 300 hp today use the same engine simply because none other has been available.

Legislating for Power

FROM preoccupation exclusively with maximum speeds from the standpoint of safety, lawmakers began to concern themselves with minimum speeds. In 1935, Rhode Island issued a regulation requiring 20 miles per hour on a 4 per cent grade; but found the requirement impracticable of enforcement. At the present time, renewed discussion of the pounds-per-horsepower ratio as a qualification for licensing has brought forth conflicting demands. The American Automobile Association, spokesman for the pleasure car owner, has come out for 375 lb gross weight per horsepower maximum. The Pilot Study on the Public Roads Administration's Project No. 5 adopted 400 lb. The Automobile Manufacturers' Association voted for 450, while the for-hire operators want at least 500. As yet, all of this is a matter of opinion; but the trend is unmistakably toward more horsepower per ton.

Since Rhode Island found such a requirement impossible of administration on a physical test basis, suppose we endeavor to translate these various standards into terms of pounds per horsepower. The results are found also on the chart, Fig. 2, varying from 316 to 334 for 20 mph; from 250 to 268 for 25 mph; and from 200 to 221 for 30 mph.

Resorting then to the A.M.A. rating proposal, 325, 260 and 210 lb per horsepower respectively would cover such requirements. Such ratios represent horsepower requirements far beyond current practice, as shown below:

HORSEPOWER AT DIFFERENT WEIGHT/POWER RATIOS

Gross Weight	210	260	325	375 AAA	400 PRA	450 AMA	500 ATA
10,000	48	39	31	27	25	22	20
20,000	95	77	62	53	50	44	40
30,000	143	115	92	80	75	67	60
40,000	190	154	123	107	100	89	80
50,000	238	192	154	133	125	111	100
60,000	285	230	184	160	150	133	120
70,000	334	269	215	187	175	155	140
80,000	380	307	246	213	200	177	160

(TURN TO PAGE 168, PLEASE)

WGB Clarofication Assures Lower Lubrication Costs—Longer Engine Life

AND HERE'S WHY: Intensive laboratory tests prove conclusively that correctly processed, properly formed and adequately supported, fine cotton is the most efficient filtering medium for all kinds of oil. Further, WGB Clarofication thoroughly cleans the oil—without removing essential additives or other lubricating qualities. The WGB Cartridge outlasts other types by a ratio of 2 to 3 . . . cuts engine repairs to a new unheard-of low—and can be changed without tools. Get to know the advantages of WGB Clarofication.

W. G. B. OIL CLARIFIER, INC.
KINGSTON, N. Y.

"You bet we use Edison!

Here's why —

"First of all, we know an Edison is *right.* It wouldn't have Thomas A. Edison's name on it if it wasn't.

"Second, we know how Edisons are made. They don't skimp on material. Posts are solid lead—plates are full-sized and rugged. They don't skimp on design, either. When they say their Endurite separators make a battery last 50 percent longer, they mean it. Our experience shows that's true.

"And Edisons can take it. We always have batteries standing around so we can slap one in right away and get that unit out on the road. When a mechanic picks up an Edison, he knows it'll be ready to go. Friend of mine who owns a service station was telling me about a fellow who came in with an Edison battery which he said was seven years old and in use all the time. My friend wouldn't believe it till the fellow produced the original guarantee. That's an Edison for you!

"Yep, I pick Edison every time. Same way about their plugs. Those Edison products can't be beat."

EDISON

SPARK PLUGS • BATTERIES

You can always rely on an Edison

Thomas A Edison

THOMAS A. EDISON, INCORPORATED
AUTOMOTIVE DIVISION • WEST ORANGE, NEW JERSEY

What Price Horsepower?

Continued from Page 166

Glancing at these figures we are at once struck by the difference between the powers here shown and those customary for the various sizes of vehicle. Hardly any commercial models today have less than 75 hp and, aside from a very few large multi-axled freighters operating in the far west, few with more than 200. Yet the above tabulation ranges from as little as 20 to 380 hp.

Checking against practice, the following figures represent a reflection of practice; however, no such broad variation in power is shown because no such uniformity in pounds per horsepower prevails.

PREVAILING POUNDS PER H.P. RATIOS

Gross Weights in Pounds	Single Units Average	Single Units Range	Combinations Average	Combinations Range
5,000 & less	54	47- 63		
5,001-10,000	87	58-125	152	101-219
10,001-14,000	131	99-157	215	172-281
14,001-16,000	158	133-180	281	229-317
16,001-19,500	159	131-186	279	228-323
19,501-26,000	180	131-240	309	226-420
26,001 and over	252	117-533	441	204-933

But we cannot legislate or regulate on any such basis as this. Any maximum prescribed must apply right across the board and so such a maximum must concern itself chiefly with the extreme of practice. But we have seen that for a 60,000-lb combination to negotiate a 4 per cent grade at 30 mph requires 273 net hp. As this is, furthermore, no more than the potential performance possible with such power, it presumes the exact gear ratio required for this speed with given tire size and governed engine speed. Realistically, therefore, to actually render such performance we would need an engine of at least 300 hp. As this is the largest truck engine commercially applicable and available for highway vehicles, this would limit gross weight to 60,000 lb.

Even the relatively mild suggestion of the Public Roads Administration, namely, 400 pounds per horsepower, would bring the required horsepower of a 60,000-lb outfit up to 150 hp. On a 4 per cent grade, such a net horsepower with 60,000 lb gross would be able to sustain a speed of a trifle below 18 mph. This is a far cry from the 2 or 3 mph frequently encountered on grades no steeper than this, and for the time being should certainly be sufficient to serve the interests of highway safety.

A Suggestion

PERHAPS a saner approach to the problem of legislating for minimum performance might be a simple minimum speed limit rather than grade ability at a given speed.

Though speeds on grades may be debatable as a measure of safety, therefore, none the less it remains as a highly potent factor of work output. Maximum daily mileage depends upon average speed. Because speed laws and common prudence place a ceiling upon maximum speed, the highest average speed can be attained only by realizing the maximum practicable acceleration and maintaining the utmost speed on adverse grades. Horsepower alone can produce these things.

Short of such extreme measures, much has been done and will be done to increase the power output of engines within convenient size and weight ranges. We may expect continued small gains in specific horsepower and by moderate increases in displacement without lengthening strokes, somewhat higher speeds and as much compression pressure as available fuels permit, higher net outputs. Ever since the war there has been a general reshuffling of engine sizes, so that down through the lines, given models have had power increases almost equal to their up-rating of capacity.

END

Please resume your reading on P. 89

and—

Dependable Performance with

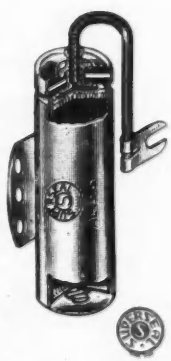
SPRINGFIELD

SUPERPOINT TUNGSTEN CONTACTS

Large diameter tungsten points (.187) last TWICE AS LONG as ordinary contacts — are furnace welded in hydrogen atmosphere, guaranteeing perfect bond. Strict adherence to original specifications, parts polished and radius ground.

SUPERSEAL CONDENSERS

Proofed against water, oil, acids, gas and fumes — each unit is stamped with identifying number. In any climate or operating condition, Superseal Condensers demonstrate their superior electrical qualities.



SPRINGFIELD ELECTRICAL SPECIALTIES, INC.

120 WOOSTER ST., NEW YORK 12, N. Y. • EXPORT DEPT.: 120 W. 42ND ST., NEW YORK 18, N. Y.

SEE HOW SHELL'S NEW "3-BARREL PLAN" CUTS YOUR FLEET OPERATING COSTS

Now, for the first time, fleet operators can achieve top quality lubrication with an actual reduction in application costs and with greatly simplified lubricants' supply. The Shell "3-Barrel Plan" takes advantage of new products of Shell Research—a new concept of chassis and gear lubrication:

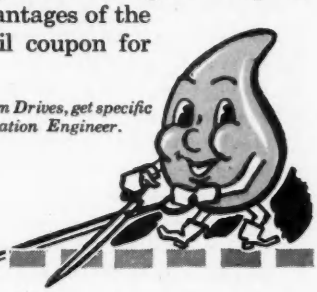
Shell Retinax A Grease does the job of 4 separate greases . . . only one gun required for every type of truck or bus . . . mechanics *can't* use the wrong grease.

Shell Spirax EP Gear Oil combines in one lubricant the different qualities demanded in transmission and differential gears.* It was developed especially for the extreme pressures of heavy-duty service.

Shell Rotella Oil for crankcase use—the oil that embodies new discoveries of Shell Research that CUT ENGINE WEAR . . . that EXTEND TIME BETWEEN ENGINE OVERHAULS.

The Shell Lubrication Engineer will be glad to explain to you the cost-cutting advantages of the Shell "3-Barrel Plan." Mail coupon for full information.

**For Hydraulic Transmissions and Worm Drives, get specific recommendations from the Shell Lubrication Engineer.*



SHELL

SHELL "3-BARREL" FLEET LUBRICATION

Shell Oil Company, Incorporated
52 West 50th Street, New York 20, N. Y. or
100 Bush Street, San Francisco 6, California

Please send me the particulars of Shell's new "3-Barrel Plan" for better fleet lubrication.

Name_____

Address_____

Company_____

Upper Cylinder Care Saves Engine Wear

Continued from Page 71

Cooling systems were cleaned thoroughly.

"We purchased premium grade gasoline and the best oil available. We started the practice of adjusting valves weekly and gave them a wider setting with the hope that the valve would cool better when it rested on the seat longer. And finally, we widened the valve seat to provide for better dissipation of heat between the valve and the block.

"All this did not answer our problems in valve troubles. In another move we installed upper cylinder lubricators on test vehicles and now find this system doing a satisfactory job in helping cut down deposits in the upper chambers. While results of this test are still incomplete, we feel that upper cylinder lubrication may accomplish sufficient results to justify its use and cost.

"We have no records to prove a saving in gasoline. I believe, however, there is little gain in fuel saving—unless rings have been stuck and valves held off seats so that combustion has been inefficient. A retuning of the engine at the time of installation may account for improved fuel economy.

"We do not use additives in the gasoline because most of the products on the market seem to reduce fuel pump diaphragm life. In other respects, however, I think you can provide upper cylinder lubrication via use of tune up oil poured directly into the fuel supply."

A Factory Branch Experience

THE superintendent of a factory truck branch reports, "I am using an upper cylinder lubricator on my own car with satisfactory results. I find a reduction of carbon formation and freedom from sticky valves. While the practice has not reduced valve burning, I feel that this condition is either the result of too high manifold temperatures, or the result of poor fuels.

"However, I do not expect to install units on the trucks in the fleet due to the service problem. We feel that we can accomplish a comparable result by the use of tune up oils every 2000 miles. While constant lubrication may keep the valves lubricated, cooled to some extent and free from some build up, we can effectively accomplish similar results using tune up oils at specified intervals."

Piston Ring Companies Say . . .

AN ENGINEER of a well-known piston ring company writes, "Upper cylinder lubrication is a problem where just as much as with anything else, the method and consistency with which it is used and the maintenance of the equipment has a great deal of effect. If any procedure of upper cylinder lubrication is not consistently and intelligently applied, the results will not be sufficiently worth while to warrant the labor involved.

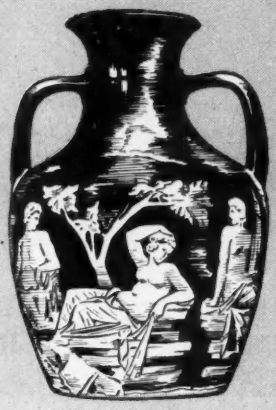
"There are several different means of accomplishing top cylinder lubrication, and it is my belief that the most practical means is either by the mixture of a good grade of lubricant in the

(TURN TO PAGE 172, PLEASE)

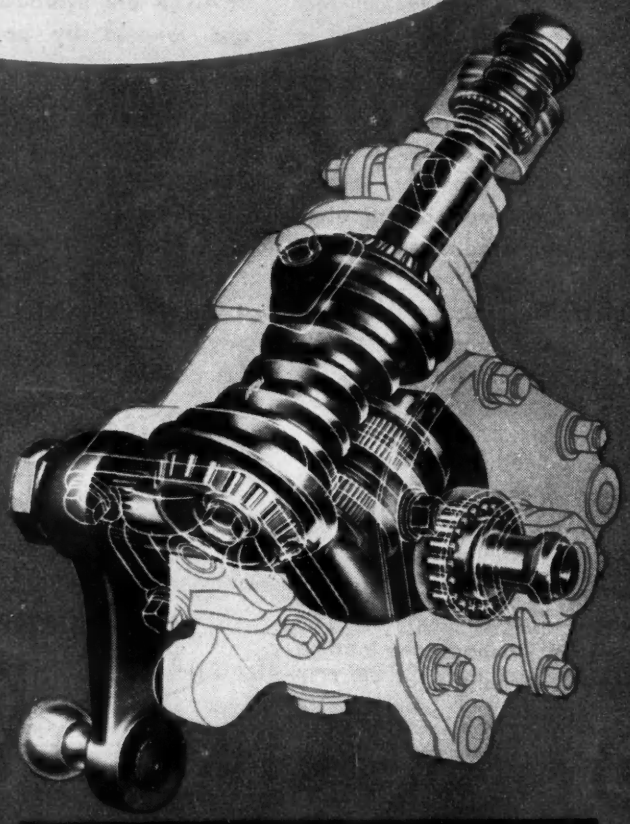
Experienced brake service men were consulted at every step in the design of these new United Hydraulic Brake Assortments to make them the most convenient and effective units you ever used! The result—(1) compact, long-lasting all-metal construction, finished in sparkling blue and yellow, with adjustable shelves for popular master and wheel cylinder kits. (2) Handy slot for new condensed "Quick-Catalog" and price list. (3) Detachable cabinet for cups, boots, and "C" washers. Available as complete unit, as shown, or as separate units for counter or wall display. Get details from your nearby NAPA Jobber. United Parts Mfg. Co., 1250 W. Van Buren St., Chicago 7.

Master Craftsmanship

The Magnificent Portland Vase



One of the finest examples of ceramic art, the Portland Vase, is a translucent dark blue urn with decoration of opaque white carved in cameo style. It is one of the priceless treasures of the British Museum.



Gemmer Steering Gears... are outstanding examples of master craftsmanship in their perfected design and enduring construction. Early in the history of the automobile, Gemmer Steering achieved a position of leadership, and today, 3 out of 4 motor vehicles are steered the Gemmer way.

The Gemmer design is fundamentally simple—a rolling gear tooth sector driven by an hourglass worm. The rolling teeth, plus the liberal use of antifriction bearings reduce friction almost to the vanishing point. Gemmer Steering is *easy steering* in heavy vehicles as well as light.

Compact, sturdy, the Gemmer Steering Gear is durable—with reasonable care it will last the life of the vehicle in which it is installed.

Gemmer Steering is always easy — firm — responsive—with absence of rubbery feeling or wander. 3437

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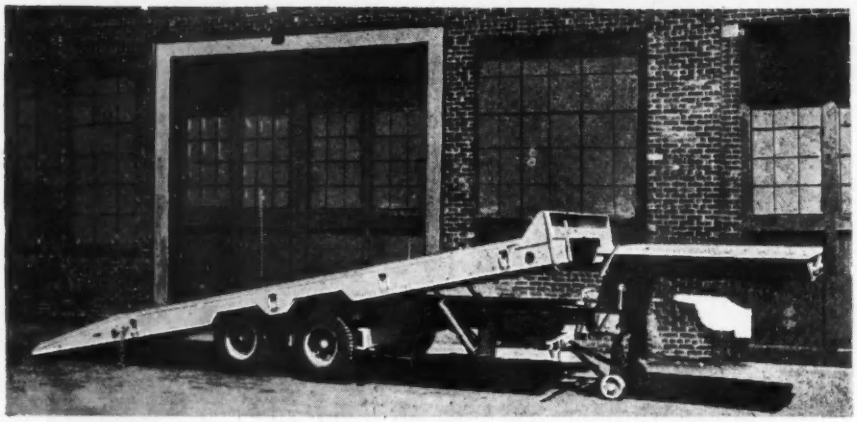
Motor Vehicle Makers and Users Have Preferred Gemmer Steering for 42 Years

LOOK, it's new!

20-TON TIP-TOP TRAILER



WITH LOADING PLATFORM and TAILSKID OPERATED by POWER-DRIVEN HYDRAULIC SYSTEM

"TIP-TOP" brings you the only real development in Trailer design in years!

TIP-TOP TRAILERS are built for TIME-SAVING, LABOR-SAVING, COST-SAVING economy. They're a MUST for owners or operators of bulldozers, road rollers, shovels, tractors, trenchers, etc. They're *indispensable* in moving this heavy (and often cumbersome) equipment quickly and safely from job to job.

There's no need for blocking, skidding, or winching when using TIP-TOP TRAILERS. No longer necessary is the hastily constructed and dangerously insecure ramps or bridges. These makeshift methods are OUT because the loading platform and tailskid of TIP-TOP TRAILER are hydraulically raised and lowered by power driven system.

Time-tested performance has proven to users of TIP-TOP TRAILERS that discarding their old and obsolete equipment was a smart move. Whether you're in the market now . . . or considering a trailer for the future . . . it will pay you to mail the coupon for full details. DO IT NOW!

TIP-TOP TRAILERS for every purpose . . . 3½ to 20-ton capacity.

A few territories still open to progressive distributors.

MAIL COUPON NOW!

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TRAILERS

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VEHICLE MANUFACTURERS FOR OVER 60 YEARS

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320 FERRY ST., NEWARK 5, N. J

Gentlemen:
Please send me FREE descriptive folder on TIP-TOP trailers.

NAME .....
STREET & NO. .....
.....
CITY ..... STATE .....
(PLEASE PRINT CLEARLY)

Upper Cylinder Care

Continued from Page 170

proper proportion with a bulk fuel so that the quantity of lubricant can be closely controlled and its uniform use will be assured, or by the means of a top cylinder lubricator.

"Regardless of the ring set-up that is used, it is my belief that properly applied top cylinder lubrication will be beneficial to any internal combustion engine for the simple reason that even under conditions of comparatively high oil consumption, there is very little lubrication at the point of the top ring and in numerous cases we have received reports that upper cylinder lubrication has eliminated, or greatly reduced, valve sticking as well as increased engine life and reduced ring and cylinder wear.

"The top cylinder lubricator is expensive to install, and is seldom kept filled and kept serviced. These devices are difficult to keep adjusted no matter how carefully they are made, and if any oil at all is metered into the engine, some noticeable cost will develop in supplying that oil.

"Everyone knows that you can lubricate the cylinders of an engine by adding the proper ratio of oil to the fuel, but that is being done in only a few spots where some smart fleet operator is sold on the idea and doing it with care and not objecting to the effort required to do it properly. Fleet operation with oil in the fuel has been very successful in the few places where it has been done scientifically.

"It takes a great deal of care to insure the proper mixture of lubricant in the fuel, and it is almost impossible to do that in a passenger car where the fuel is being purchased from a filling station. It can be done with some success with a fleet operation where the fuel is kept in storage by the fleet.

"It is the writer's opinion that with a crankcase additive the wetting action of the additive and its tendency to creep over metallic surfaces and carrying lubricant with it is the best method. Without any question, the addition of an additive to the crankcase oil is the cheapest way to do it because the crankcase oil will stay in there from 1 to 8000 miles. The cost factor does slow down useage in fleets simply because the engines will run without any such expense, and upper cylinder wall and piston ring wear is a remote thing until after considerable testing and road experience is obtained.

"It must be remembered that there

(TURN TO PAGE 174, PLEASE)

AC QUALITY OIL FILTER ELEMENTS

Dirt-Proof

your engine oil

Your bus or truck engines will perform better, cost less to operate, use less fuel and oil, and cost less to repair, if you "Dirt-Proof" the oil with AC Quality Oil Filter Elements.

Hard-working engines need this kind of protection. And they deserve the very best in oil filter elements. AC's highest quality is now available to you in elements designed for your present filters, or in complete new filter installations.

And when it comes to operating costs, AC Quality Filters and Elements have a twenty-year record of real savings—all over the country, and in every kind of commercial vehicle on the road.

AC
OIL FILTERS

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

Upper Cylinder Care

Continued from Page 172

is an objection to top cylinder lubrication under the conditions where cylinder wall and piston ring wear is excessive because where this wear is excessive, abrasive is nearly always at the bottom of the trouble. When abrasive is present in the incoming fuel mixture, upper cylinder lubrication will do no good whatsoever. In fact, it does some harm because the wetting of these surfaces causes the abrasive to cling longer and do more damage. Of course, this sort of condition should not exist. All engines operated under dusty conditions should be amply protected by adequately serviced and modern air cleaners. Abrasive cylinder wear does exist, and some operations are so severe from the dust standpoint that even an air cleaner will not entirely do the job. Engines under such conditions cannot be helped by top cylinder lubrication and of course those engines are the ones where upper cylinder wall wear and ring wear prevention are most important and most serious to the owners and operators."

An Oil Manufacturer Says . . .

A MANUFACTURER of tune up oils has this to say: "Top cylinder, valve oil or what is generally termed tune up oil, in our opinion should be applied or used in several ways. In the case of a badly fouled engine, a big improvement can be made in many cases by removing the oil from the crankcase and filling up with the tune up oil of the proper type. Tune up oil in the crank case should keep the engine from becoming fouled up and if properly compounded will have corrosion resistant and acid neutralizing value.

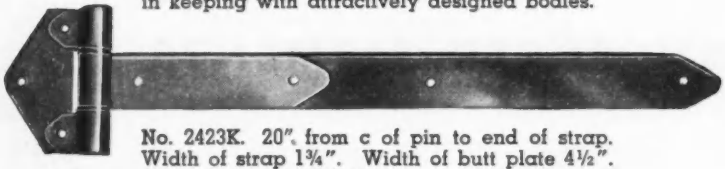
"A method which has been successfully used in cleaning out and lubricating the top cylinder area and producing a better valve action in a short time consists in removing the air filter from the carburetor and as the engine is running slowly, pouring about a pint of tune up oil into the carburetor. Definite improvement will be noted, and this operation can be repeated several times a year.

"It is also recommended that about 4 ounces of tune up oil be added to each tank full of gasoline. This will give sufficient upper cylinder lubrication and also assist in keeping the upper cylinder area clean. Tune up oils of the proper type would decompose sufficiently in the upper cylinder during this operation to liberate mascent gas which has a detergent

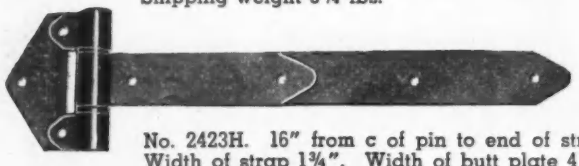
(TURN TO PAGE 176, PLEASE)

A NEW PRODUCT
by "Cleveland":
ALL STEEL HINGES

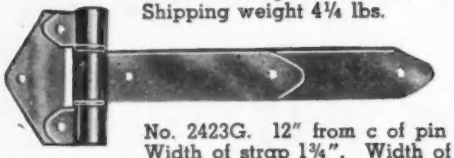
Sturdy 3/16" thick all-steel laminated flush hinges, carefully made to rigidly support the heaviest doors without sag. Of modern design in keeping with attractively designed bodies.



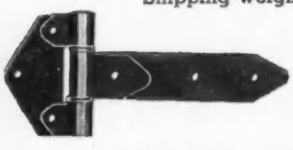
No. 2423K. 20", from c of pin to end of strap. Width of strap 1¾". Width of butt plate 4½". Shipping weight 5¼ lbs.



No. 2423H. 16" from c of pin to end of strap. Width of strap 1¾". Width of butt plate 4½". Shipping weight 4¼ lbs.



No. 2423G. 12" from c of pin to end of strap. Width of strap 1¾". Width of butt plate 4½". Shipping weight 3¼ lbs.



2423½F ..... 8"
2423½G ..... 12"
NEW DESIGN FOR USE ON LINDSAY STRUCTURE BODIES!

No. 2423F. 8" from c of pin to end of strap. Width of strap 1¾". Width of butt plate 4½". Shipping weight 2¼ lbs.

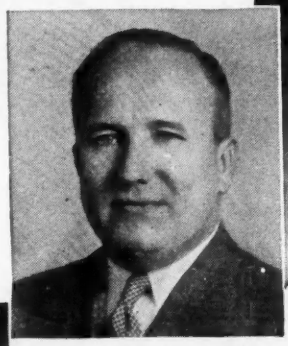
FOR MORE COMPLETE INFORMATION Write "Cleveland"

The Cleveland Hardware & Forging Co.
Established 1881
3264 East 79th St. Cleveland 4, Ohio

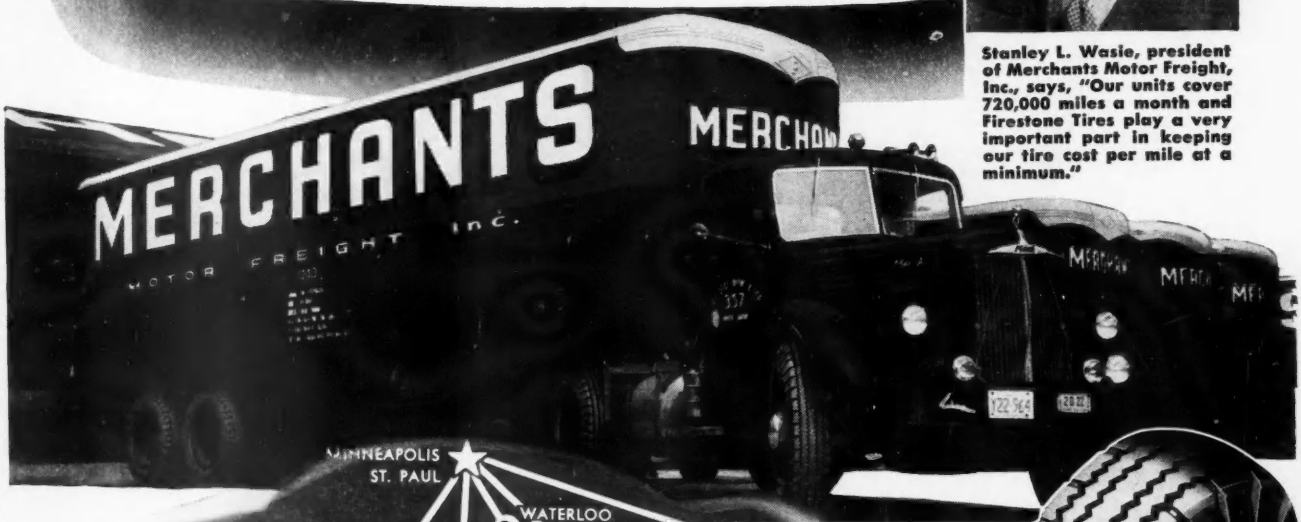
N.T.T.C. Accepts Safety Award

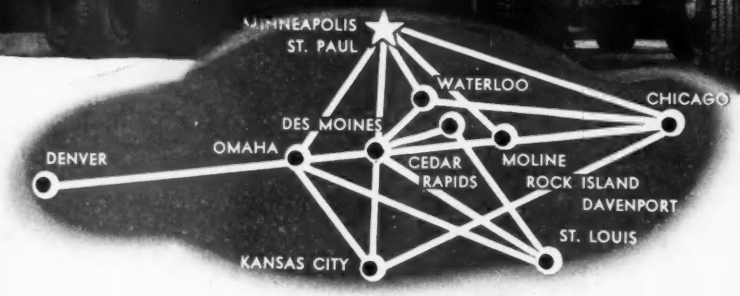
The Trailmobile Co. presented to the National Tank Truck Carriers Association a huge safety trophy, to be awarded each year to the tank truck operator chosen by the American Trucking Association, for its record of outstanding safety and courtesy on the highway. F. A. Schotters, vice-president of Trailmobile, presented the trophy to Sam Niness, President of National Tank Truck Carriers Inc., at the Denver Convention.

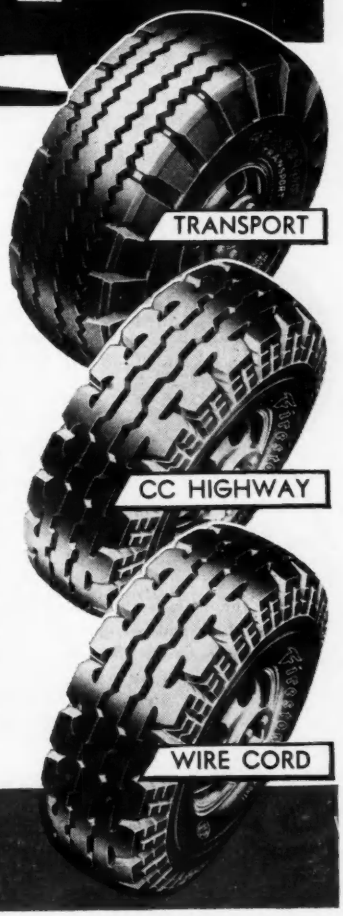
MERCHANTS moves the freight on Firestone TIRES



Stanley L. Wasie, president of Merchants Motor Freight, Inc., says, "Our units cover 720,000 miles a month and Firestone Tires play a very important part in keeping our tire cost per mile at a minimum."







THE growth and success of the far-flung truck lines of Merchants Motor Freight, Inc. of Minneapolis and St. Paul is a result of good service. Merchants has been a pioneer in interstate and overnight service — in overhead chain conveyors—pneumatic tube systems — direct wire facilities — and through-trailer service. Merchant's bid for business is, "To give you more and more value for your transportation dollar."

To give more value for the transportation dollar, Merchants has to get more value for its tire dollar. That's why Merchants is a big user of FIRESTONE TIRES. On this fleet of 320 pieces of equipment, you will find FIRESTONE TRANSPORTS and FIRESTONE C. C. HIGHWAYS predominating. Merchants keeps an accurate record of every tire on its 3100 rolling wheels and FIRESTONE TIRES are on the job for one main reason — they give longer, lower cost mileage.

If you want to duplicate Merchant's low tire cost per mile, *try Firestone Tires on your equipment — The Transport, The C. C. Highway* or *The Wire Cord.* Let them prove themselves to your own complete satisfaction. It's one sure way to cut your tire costs.

WHEN BUYING NEW TRUCKS, TRACTORS OR TRAILERS, SPECIFY FIRESTONE TIRES

FIRESTONE TRUCK TIRES

For Every Load, Road and Condition of Service

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Kester Solder 1st choice of mechanics everywhere...

Standard for the Trade since 1899

Kester products have been in constant demand by mechanics for over half a century.

POSITIVE FLUX UNIFORMITY

LABORATORY CONTROLLED

Kester Acid-Core Solder
Kester Plastic Rosin-Core Solder
Kester Radiator Solder (Flux-Core)
Kester Solid Wire and Bar Solder
Kester Soldering Salts
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Insist upon Kester from your jobber!

The tin-lead content of Kester Solder was established many years ago by you, the trade, as the alloy that would give the best results. Do not accept substitutes.

1899 50th Anniversary 1949

KESTER SOLDER

KESTER SOLDER COMPANY
4201 Wrightwood Avenue, Chicago 39, Illinois
Factories Also at
Newark, New Jersey • Brantford, Canada

Upper Cylinder Care

Continued from Page 174

action on gum and carbon deposits on the piston head and around the valve seats. This will decrease the tendency to knock and also provide better valve action and would prevent blowby and warped valves.

"Summarizing, a desludging operation as discussed above will often prevent the necessity for an expensive ring and valve job. Application of the tune up oil to the upper cylinder via the carburetor will result in upper cylinder lubrication and cleaning operation and also improved valve action. Smaller amounts of tune up oil added to the gasoline will provide a continuous and sufficient lubrication to the upper cylinder preventing excessive wear of the parts normally not well lubricated."

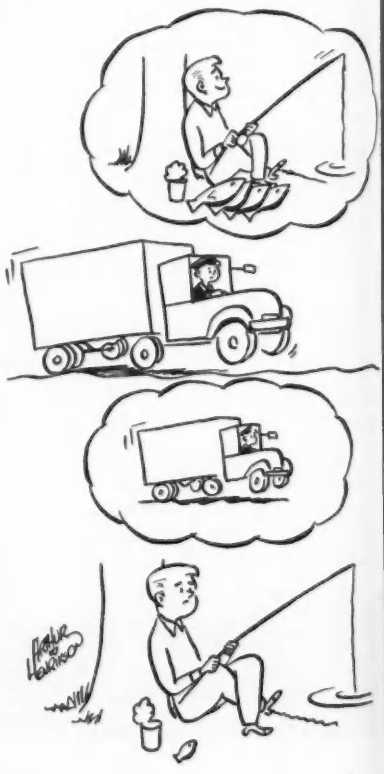
Oil Companies Report . . .

AN OIL company states: "Laboratory tests have convinced me that upper cylinder lubricants have only a minor effect, and the chances are that in a well maintained engine, they do practically nothing either good or bad. I believe the prime utility of such materials is for engine break-in periods."

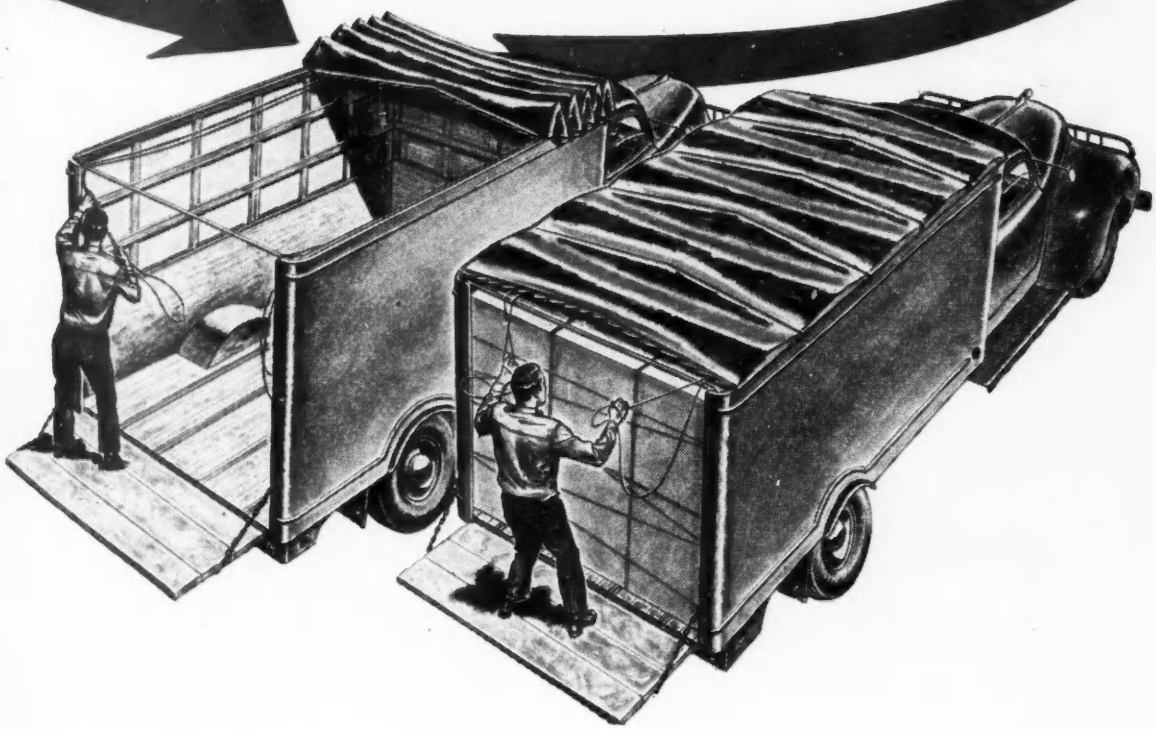
And another oil manufacturing representative informs us: "This is a subject on which there are differences of opinion among the various oil companies, and we prefer to maintain a neutral position."

(END)

(Please resume your reading on P. 72)



Increase Tarpaulin Life Speed your Operations With Pittsburgh TRUCK-TOPPER



Save wear and tear on your tarpaulins—save time at loading docks—and reduce damage claims with the new Pittsburgh TRUCK-TOPPER. With it, your truck can be covered or uncovered in a few minutes as the tarpaulin is securely tied to evenly spaced steel bows that slide forward or back with little effort. This eliminates many of the side ties. TRUCK-TOPPER is operated by one man and is easily and economically installed on trucks 16 ft. and under.

For more information on how you can save time and money with Pittsburgh TRUCK-TOPPER, see your new truck dealer or write to Pittsburgh Steel Products Company, Dept. CCJ, Grant Building, Pittsburgh 30, Pa.

TRUCK-TOPPER *List Price Approximately $90.00*

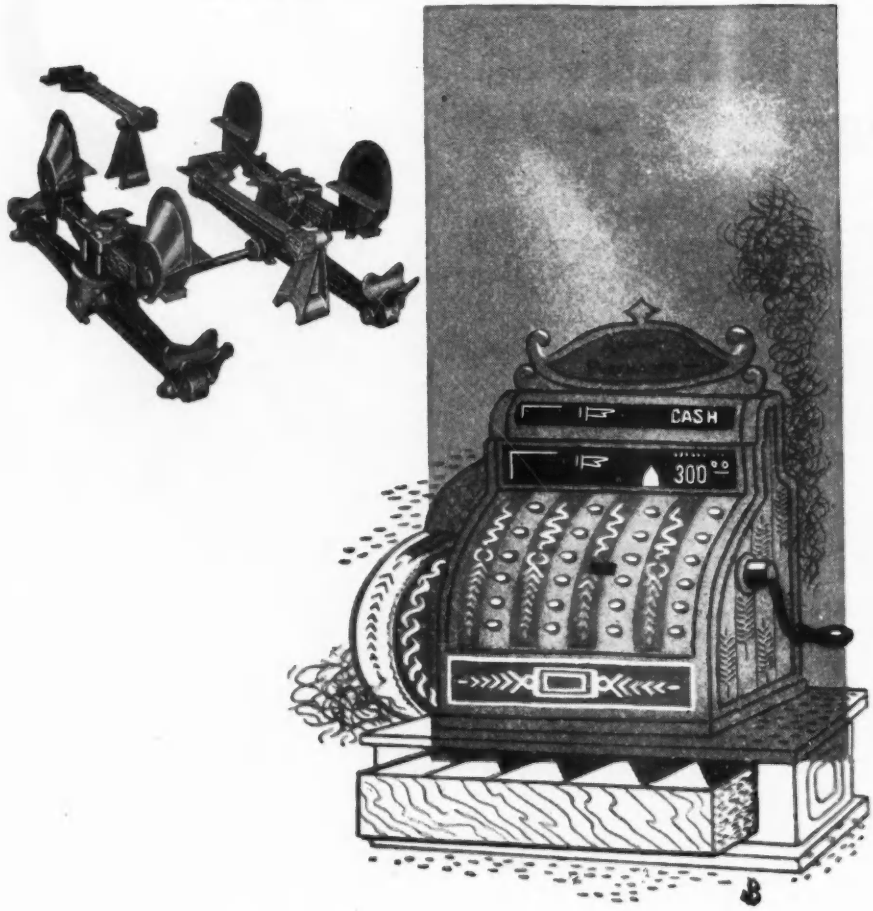
For trailers and large trucks over 16 ft., the power controlled Pittsburgh SPEEDRACK is recommended. It is now in use on hundreds of pieces of equipment.

Pittsburgh TRUCK-TOPPER

Pittsburgh Steel Products Company

A Subsidiary of Pittsburgh Steel Company

"Follow the Leader"



...DOUGHNUTS TO DOLLARS—

—Doughnuts or steel products; cattle or furniture; whatever your cargo—

Hendrickson Tandem axle units add more dollars to your profit by increasing the proportion of payload to gross weight.

Hendrickson Tandems add this extra profit to your operation by: better weight distribution; more fuel economy; reduced road shock; easier pull; cargo protected from shifting damage; greater safety.

HENDRICKSON TANDEM

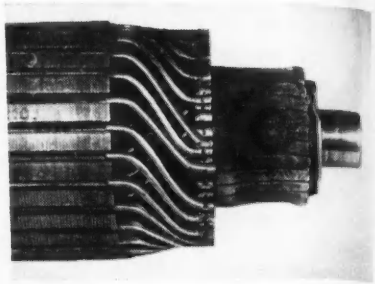
HENDRICKSON MOTOR TRUCK COMPANY

8001 West 47th Street • Lyons (Chicago Suburb) Illinois

Murder

Continued from Page 79

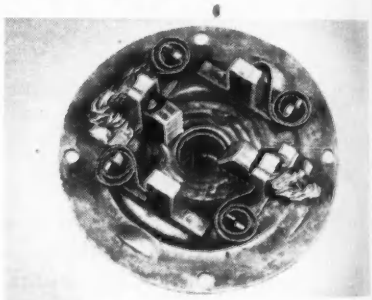
Cause:
Shorted Commutator Bars



Result:
Several of the commutator bars have become shorted, and excessive current has melted connections on armature windings. Starter will turn engine spasmodically and only when undamaged bars contact brushes.

Remedy:
Proper servicing of brushes and commutator might have averted this failure. Keep brushes aligned, replace worn brushes and weak springs. Turn commutator on a lathe and cut mica back as required.

Cause:
Defective Brushes



Result:
Brushes have worn to a point where they do not make good contact with commutator. Leads are defective and springs are weak. Starting motor will turn slowly and arcing will be noted at brushes.

Remedy:
Replace brushes and springs. See that proper brush-commutator contact is established.

END

Please resume your reading on P. 80

★★★★★★★★★★★★★★★★★★★★★★★★★★

JOBSERVATION

You can do a lot of bluffin' by keepin' your mouth shut.

★★★★★★★★★★★★★★★★★★★★★★★★★★

Free Rings—every time

A QUICK look at the "repair" figures in your operating expense account will show that cylinder re-boring is one of the costliest of maintenance jobs. Out-of-round or scored cylinders are caused by "stuck" piston rings. These waste oil—even before you're faced with the expense of re-boring.

Quaker State HD Oil is noted for its special quality characteristics which keep rings *free*—assure maximum compression, peak operating efficiency and finer lubrication. Skillfully refined from 100% pure Pennsylvania grade crude oil, it keeps engines clean as it lubricates.

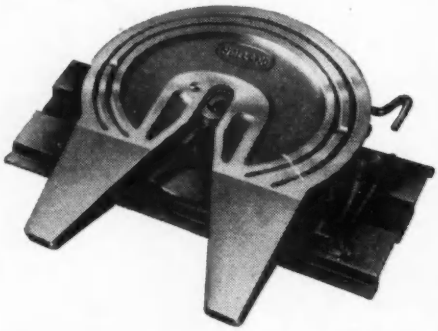
In the correct weights for every heavy duty use in trucks, buses, tractors and taxis, Quaker State HD Oil helps you get the highest return on your equipment investment.

QUAKER STATE HD OIL
AND SUPERFINE LUBRICANTS

Use Quaker State HD Oil for trucks, buses, taxis, tractors. Use Quaker State Motor Oil for passenger cars.

QUAKER STATE OIL REFINING CORPORATION • OIL CITY, PENNSYLVANIA

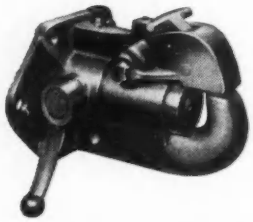
Holland Engineered
TRANSPORT EQUIPMENT



built to stand the gaff

Recently re-designed, Holland 5th Wheels have that extra ruggedness that will take the toughest usage. Maintenance cost is cut to a minimum, reliability reaches a new high in these *engineered* 5th wheels. It will pay to ask your supplier about the complete Holland line, or write for free catalog on the new, improved, Holland 5th wheels.

SHOCKLESS TYPE
Pintle Hook



No. 625

There's no slack or surge when you use the new Holland shockless type pintle hooks. Built heavy for heavy duty, use-tested on heavy assignments, Pintle Hooks by Holland Hitch are a sound investment in safe, trouble-free, low cost transportation.

HOLLAND HITCH CO.
HOLLAND, MICHIGAN

C.C.J. Newscast

Continued from Page 108

25 STATES ADOPT UNIFORM LAWS

Progress towards uniform motor vehicle laws through the adoption of some part or substantially all of the Uniform Motor Vehicle Acts has been made by at least 25 states this year, according to the National Highway Users Conference.

The Uniform Traffic Act (Act V), has received the greatest attention, with conforming legislation enacted in 20 states. Statutory amendments to conform more closely to Act II (the Uniform Drivers' License Law) were enacted in seven ssates. Steps towards closer uniformity with the Uniform Certificate of Title Law (Act I) were taken in five states.

T. J. Kauer, Ohio director of highways, will take the lead in promoting uniform regulations on highway truck load limits in states between the eastern seaboard and the mid-west. Highway officials from New York, New Jersey, Pennsylvania, West Virginia, Kentucky, Indiana, Michigan and Illinois will be invited to join discussions to explore practical posibilities of uniform regulations in all states named.

STUDY WISCONSIN ROADS

The Wisconsin Legislature has given final approval to a research investigation to find out whether taxpapers are getting their money's worth in public roads expenditure estimated to amount to at least $100 million annually. The House ratified a Senate proposal to create a Highway Research Interim Committee under the direction of the Legislative Council. Before the 1951 Legislature, it will make a comprehensive survey of highway administration, financing and taxation.

(TURN TO PAGE 204, PLEASE)

Classified Advertisement

For Sale

LOWBED TRAILERS—Rogers 15-20 ton semi-trailer, 19" deck height, completely equipped. Excellent condition. Designed for Rigger. Also fine for Contractor or Hauler. Also have bargain in 60 ton Rogers. C. C. KEESLER, 1515 Lincoln Ave., Prospect Park, Pa. Phones Ridley Park 1606—Washburn 8-1529.

YOU CAN DEPEND ON
McCORD GASKETS
MOST CAR AND TRUCK MAKERS DO

McCORD CORPORATION
Detroit, Michigan

Gaskets • Radiators • Mufflers
Pipes and Oil Retainers

STEP UP SHOP EFFICIENCY with
BISHMAN
SERVICE EQUIPMENT

870 HEAVY DUTY VULCANIZER

GIANT SIZE—16" clearance—repairs up to 8½" tear. For ALL jobs, BIG and small, also valve stems. Heat element on top, thermostatic control. Thick rubber pad. Aluminum frame, stainless steel shoe.

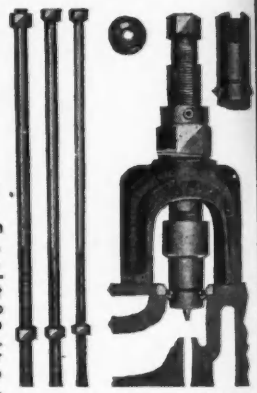
★ ★ ★ ★ ★

815 E-Z OFF RIM PROTECTIVE COMPOUND

STOPS sticking of tires to rim, water seepage, rust and corrosion. Spread it on rims before mounting tires. Harmless to rubber. NEW TRIAL QUART SIZE with brush in cover. Also 1 and 5-gal. cans. Money back guarantee.

★ ★ ★ ★ ★

810-811 VALVE SEAT RING AND GUIDE REMOVER



Pulls them EASILY, QUICKLY, SAFELY—without damage to engine block. No. 811 for rings 2" to 3¼". No. 810 for 1½" to 2". No. 810A Small head for 15/16" to 1⅛".

★ ★ ★ ★ ★

125 IMPROVED RUBBERJUG

The old reliable 100% unbreakable battery filler with its compact design, flexible rubber construction and other advantages. NOW has NEW lifetime all lead mechanically sealed HOSE FITTING.

ASK YOUR JOBBER—or write

BISHMAN MFG. CO., OSSEO 4, MINN.

LOOK to BISHMAN for BETTER Equipment
50 DIFFERENT ITEMS • ASK YOUR JOBBER

Buy Willard For
DEPENDABILITY · PERFORMANCE LONG LIFE!

TRG and TWG for Heavy Trucks and Tractors

BRG and BWG for Buses and Motor Coaches

THERE'S A Willard FOR EVERY BATTERY JOB

TRG AND TWG TYPES. For 6-volt starting, lighting and ignition on heavy Diesel or gasoline powered trucks and tractors. Sturdy, hard rubber containers. Exclusive Willard "Safety-Fill" construction to prevent over-filling. TWG types with selected wood separators and glass fibre retaining mats for normal service. TRG types with Willard Rubber Insulation and glass fibre retaining mats for cycling service and for vehicles in severe, high mileage service.

BRG AND BWG TYPES. For 12-volt starting, lighting and ignition on Diesel and gasoline powered motor coaches and buses. Strong, hard rubber containers. Exclusive Willard "Safety-Fill" construction to prevent overfilling. BWG types with selected wood separators and glass fibre retaining mats for normal service. BRG types with Willard Rubber Insulation and glass fibre retaining mats for cycling service and for vehicles in severe, high mileage service.

CWG TYPES. For 6-volt starting, lighting and ignition on light to medium weight trucks and for passenger cars in commercial service. Dual insulated with selected wood separators and glass fibre retaining mats. Sturdy, hard rubber containers. Exclusive Willard "Safety-Fill" construction to prevent overfilling.

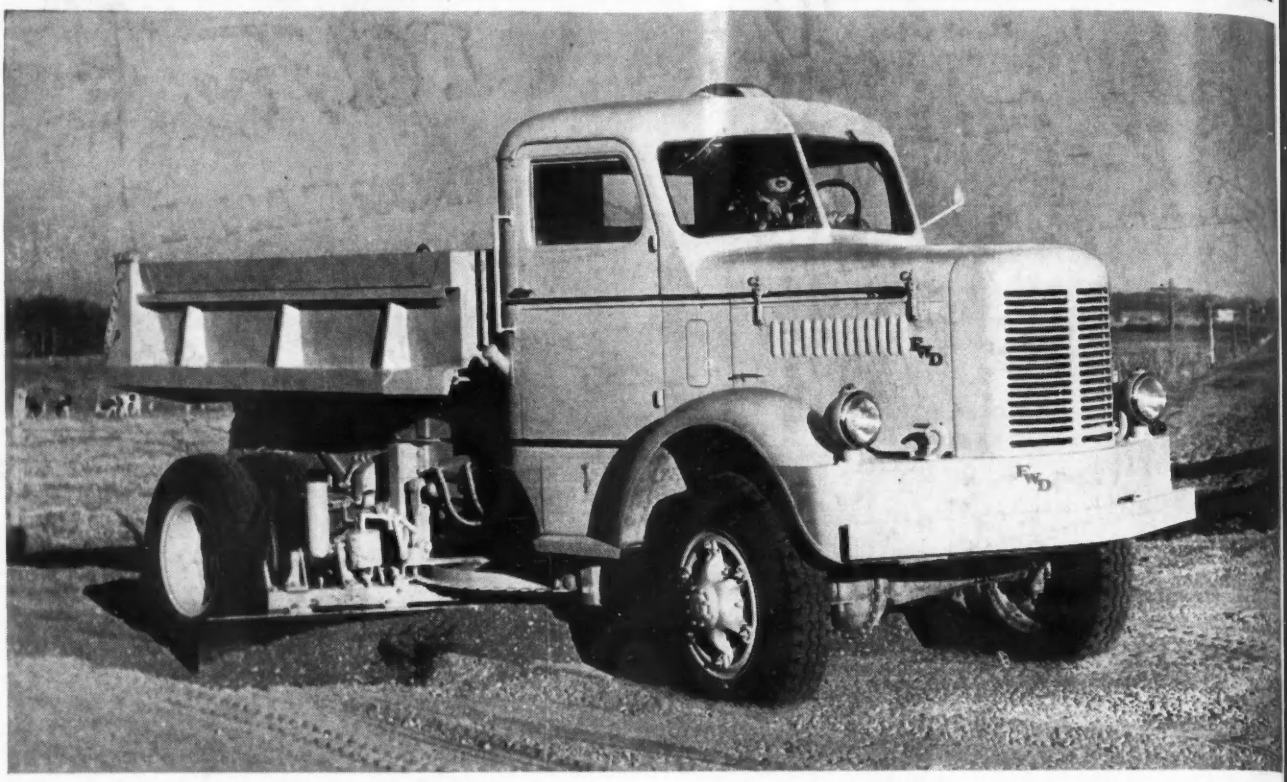
CWG for Light Trucks

WILLARD STORAGE BATTERY COMPANY

Cleveland • Los Angeles • Dallas • Memphis • Portland • Toronto

PROOF - *not Guesswork*

Makes FWD America's Foremost Heavy-Duty Truck



Here's actual operating proof in road maintenance service. This FWD Maintainer is doing a regular job — road-grading. With front wheels pulling and back wheels pushing, you grade smoothly, steadily, even in loose sand or gravel. What's more, FWDs can travel 50 miles or more to and from a job — and still do a day's work. *No wonder FWD trucks are the number one choice of states, counties and municipalities — with individual fleets of over 300 units!*

WHAT FWDs Do ON THE PROVING GROUND
1 Highball over hilly curved roads!
2 Slog thru mud — up to the bumper!
3 Speed over 100-ft. unbanked circle!
4 Twist over ditches — 18 inches deep!
5 Drive up 6% grade thru 3-ft. of sand!
6 Climb 70% grade from dead stop!
7 Climb 8-in. beam from standstill!
8 Drill pole holes to prove equipment!
9 Speed safely over level highways!
1
2
3
4
5
6
7
8
9

This is FWD's proving ground. This is your assurance that the FWD you select has the stamina to insure long life without expensive mechanical breakdowns.

An FWD plows through 3 feet of sand at the proving ground. For all the facts on FWD, see your FWD distributor — or write FWD direct.

An Invitation To Truck Buyers

We invite you to watch FWDs pass a series of rigid performance tests. Ask your FWD distributor to arrange your visit to our plant. Or — if you can't get away, ask him to show you the movie, *The FWD Story*. In either case, you will see for yourself how FWD trucks can help solve your heavy-duty trucking problems.

Matt A. Olson
President
The Four Wheel Drive Auto Company

THE FOUR WHEEL DRIVE AUTO COMPANY
Clintonville, Wis. • *Canadian Factory:* Kitchener, Ontario
FOUR AND SIX WHEEL DRIVE TRUCKS

America's Foremost Heavy-Duty Truck